JUNE 1935

COTTON

Serving the

TEXTILE INDUSTRIES

DIXIE durene helps you put wear, comfort, style—the qualities that help get business — into your merchandise because controlled manufacture puts them into Dixie durene.

Let Dixie's representative get you samples, in any count, put up to suit your machines; that will show you how this yarn helps you put the qualities in your numbers that help bring repeat orders.

DIXIE MERCERIZING CO.
CHATTANOOGA, TENNESSEE

Dixie Durene A Product of Controlled Manufacture

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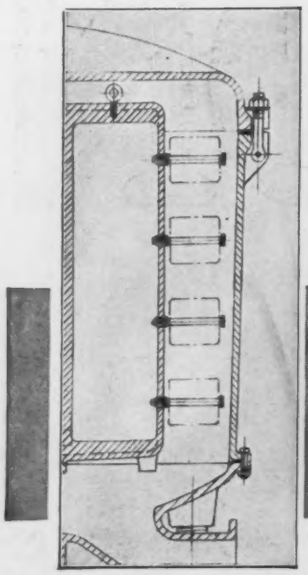
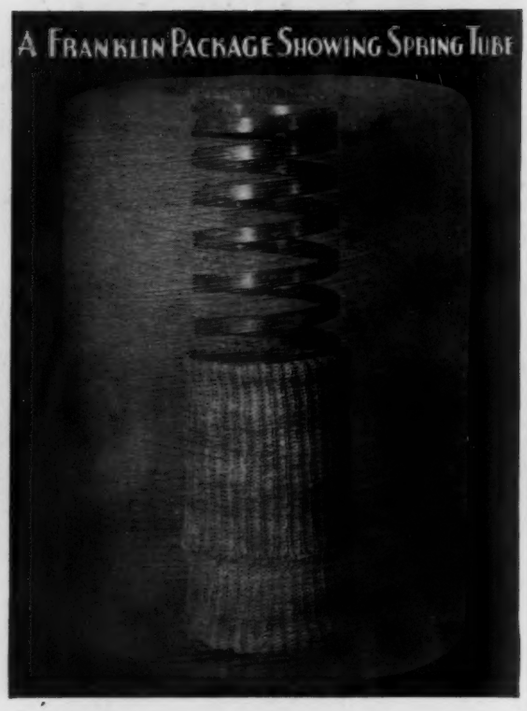
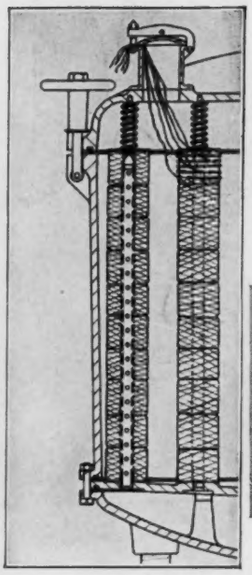


Only one package to a spindle. . Soft packages get more dye liquor. . Hard packages get less dye liquor. . Result— uneven dyeing.





More than one package to a spindle. . Soft packages compress more. . Hard packages compress less. . All packages get same amount of dye liquor. . Result— even dyeing.

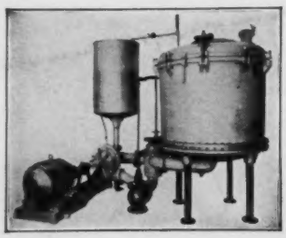
THE SECRET OF CONSISTENTLY LEVEL SHADES IN PACKAGE DYEING

WE hear much these days of the relative merits of rigid tube package dyeing and Franklin spring tube dyeing. What are the facts?

We could redesign Franklin Process Package Dyeing Machines tomorrow, if we desired, to use rigid tubes instead of spring tubes. There is nothing in the patent situation to prevent us, because the rigid tube is at least twenty years older than the Franklin Process. However, we hold to spring tube dyeing because of one big advantage that it has over the other method. The Franklin spring tube is the secret of consistently level shades in package dyeing.

The Franklin spring compensates for uneven winding. If one package is softer than another it is compressed more when the cover of the machine is clamped in place (the spring permits this compression). The result is that the same amount of dye liquor flows through each package and each package is dyed the same shade.

The same can not be truthfully said of rigid tube dyeing, because a rigid tube can not be compressed. If rigid tube packages are not uniformly wound when placed in the dyeing machine, they remain so during the dyeing operation and some get more dye than others.



Rigid tube dyeing of course assumes consistently uniform winding, but practical mill men know that such a thing is rare.

The Franklin spring is only one of many features which have enabled Franklin Process Package Dyeing Machines to make an unparalleled performance record. The most impressive part of this record is the fact that Franklin Process Commission Dyeing Service, using Franklin Process Package Dyeing Machines exclusively, grew from a small experimental station to the largest organization of its kind in the world in approximately ten years. Such progress would have been impossible if Franklin Process machines did not have exceptional merit.

Other examples of Franklin Process Package Dyeing machine performance will be furnished on request, also other features which have made this performance possible. The story is told in the booklet, "Franklin Process Package Dyeing Machines." If you wish a copy, write on your business stationery. No obligations.

PURCHASE ON PERFORMANCE

FRANKLIN PROCESS COMPANY

Manufacturers of Package Yarn Dyeing Machines, Jackspool Dyeing Machines, Worsted Top Dyeing Machines, Wool and Cotton Raw Stock Dyeing Machines and Silk Soaking Machines

PROVIDENCE, R. I., U. S. A.

FRANKLIN PROCESS

· · PACKAGE DYEING MACHINES · ·

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Seven Reasons for More Sheets

A Family Like This One Calls for **Lots of Sheets**

Modern Conditions and Present Day Standards of Living Call for **Lots of Sheets**

Our X L Model High Speed Loom Will Give You **Lots of Sheets**

To Be Exact

7 More Broad Sheets

Per Loom Per 40 Hour Week

and

At Lower Costs

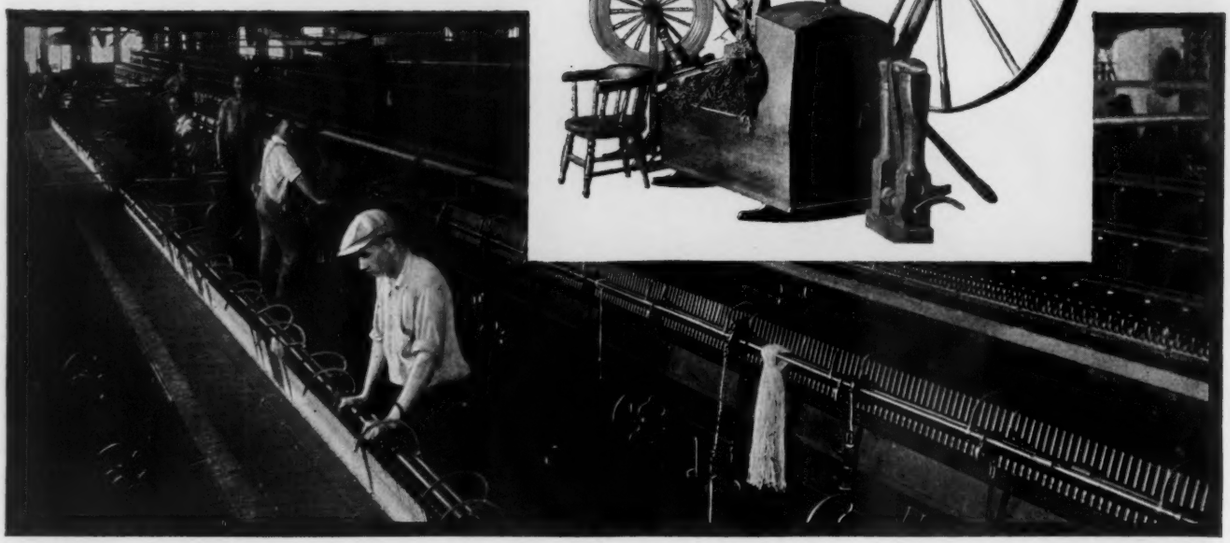
Our New High Speed Looms Are the Tools You Need to Help You

Lower Production Costs and **Break Sales Resistance**

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

MODERNIZATION *is still a matter of* METHOD



Once the spinning wheel in a thousand homes did it—today thousands of spindles in modern plants *do it better*—

Today's march of modernization toward better products, lower costs, bigger profits, is as much a matter of *method* as of machine.

In many textile mills, Texaco is helping management and operators to modernize their lubrication. Frequently this kind of modernization saves power, reduces maintenance and repair expense, speeds up production schedules, lessens spoilage, lowers the consumption of oils and greases.

$18,000 is pretty big proof

In one well known southern mill, Texaco lubrication engineers demonstrated that Texaco *tested* Lubricants would make a saving of 18 cents per spindle per year. With a total of 100,000 spindles that small saving reached the impressive total of $18,000. And troubles due to spindle wobble and staining were practically eliminated.

But "price" doesn't tell you what an oil will do. The real cost of lubrication is seen in your yardage costs per loom. And when—according to a prominent textile authority—there are 154 places in your mill where lubrication can affect production costs, modernizing your lubrication is worth thinking about.

In cooperation with your men

Your mill may be "different." And Texaco freely admits that *the men in your own plant know most about your business.* But the friendly, helpful way in which our engineers reveal the importance of lubrication to your men, frequently enables *them* to devise immediate and valuable results. This service is yours for the asking.

THE TEXAS COMPANY
135 East 42nd Street New York City

Nation-wide distribution facilities assure prompt delivery

TEXACO *tested* LUBRICANTS

REFINERY TESTED FOR UNIFORMITY • • • SERVICE TESTED FOR ECONOMY

● **SEALING** is as much a matter of life and death to the anti-friction bearing as to the deep sea diver.

Bearing seals keep lubricant in and dirt out. To attain maximum life, every bearing must have them.

But it remained for the creative thinking of New Departure engineers to pioneer a bearing completely lubricated and with seals *built in!*

Thus, New Departure has anticipated the desire of many machine builders to eliminate a multiplicity of extra parts and the cost of assembling them.

Booklet "O" describes this epoch-making bearing, and its possibilities in your machine.

The New Departure Mfg. Company, Bristol, Conn. Branches at Detroit, Chicago and San Francisco.

—Designed to Save Time and Money in SILK and RAYON Mills

THESE two new shuttles have already proved their effectiveness in hundreds of silk and rayon mills.

AT first, some mill executives were naturally skeptical of our claim that these shuttles would give *positive tension on the first pick and every pick.* However, samples soon *proved* their time, labor and money saving features. We do not ask any one to believe what we say about these shuttles—we merely ask that you give them a fair trial. We are confident that reorders will tell us what you think of them. (Note: More than one hundred mills have reordered one or the other of these shuttles.)

U S Jackson Tension Shuttle

For bobbin changing looms—eliminates loose and tight picks—adjustable to any desired tension — supplied with or without furring — available in Persimmon, Dogwood or Fibre-Clad.

U S Unit Tension Shuttle

For plain or shuttle-changing looms—eliminates loom stoppage to replace worn pads, mops or felts. Used in combination with the U S Hand-Threading Eye — eliminates shuttle hooks —saves weaver's time

Ask the nearest U S Sales Representative to demonstrate these shuttles in your plant.

U S BOBBIN & SHUTTLE CO.

Manchester, New Hampshire

Branches: Providence, R. I.; Lawrence, Mass.; Philadelphia, Pa.; Monticello, Ga.; Charlotte, N. C.; Greenville, S. C., Johnson City, Tenn.

Chicago Agent: Albert R. Breen, 2650 Coyne St.

BETTER BOBBINS • SPOOLS • CONES • SHUTTLES

A MODERN FABLE ... with a Happy Ending

A SALES YARN mill found itself unable to make quality yarns at a COST that would LET THEM OUT. 30's carded ply yarns were manufactured by MORE MODERN MILLS at a price that permitted them to UNDERSELL. .

This mill was not LONESOME. It had plenty of COMPANIONS who were LOSING MONEY. But this did not make them so HAPPY, and they thought SOMETHING OUGHT TO BE DONE about it. So they called in sales engineers to DISCUSS WAYS and MEANS. .

Because they had an OLD FASHIONED IDEA about giving the customer a BREAK, they decided to use the same staple and character of cotton. So they called for a NEW DEAL. As they did their own SHUFFLING, there were no LOOSE ACES in anybody's SLEEVE. . .

They made a careful REORGANIZATION, with lighter carding, larger roving packages, new, wide gauge spinning with long draft, and larger twister packages. By rearranging their MACHINERY, they were not obliged to add any NEW BUILDINGS. IN NO TIME AT ALL they were operating on the NEW BASIS. .

After three months they reported CLEANER and MORE EVEN card sliver. One-quarter of the roving spindles were DONE AWAY WITH, but the spinning creels were furnished with LARGER and MORE EFFICIENT roving bobbins. Their YARN PRODUCTION was 45 per cent GREATER, with only 21 per cent more spindles, and they put 69 per cent more yarn on the spinning bobbins. . . . . .

Speed of the front rolls on their spinning was 30 per cent GREATER than BEFORE. .

The DIRECT and INDIRECT LABOR COST was reduced 40 per cent. . . . . .

Their OVERHEAD was cut by 45 per cent. .

The breaking strength of their yarn was increased 5 per cent and was much more EVEN.

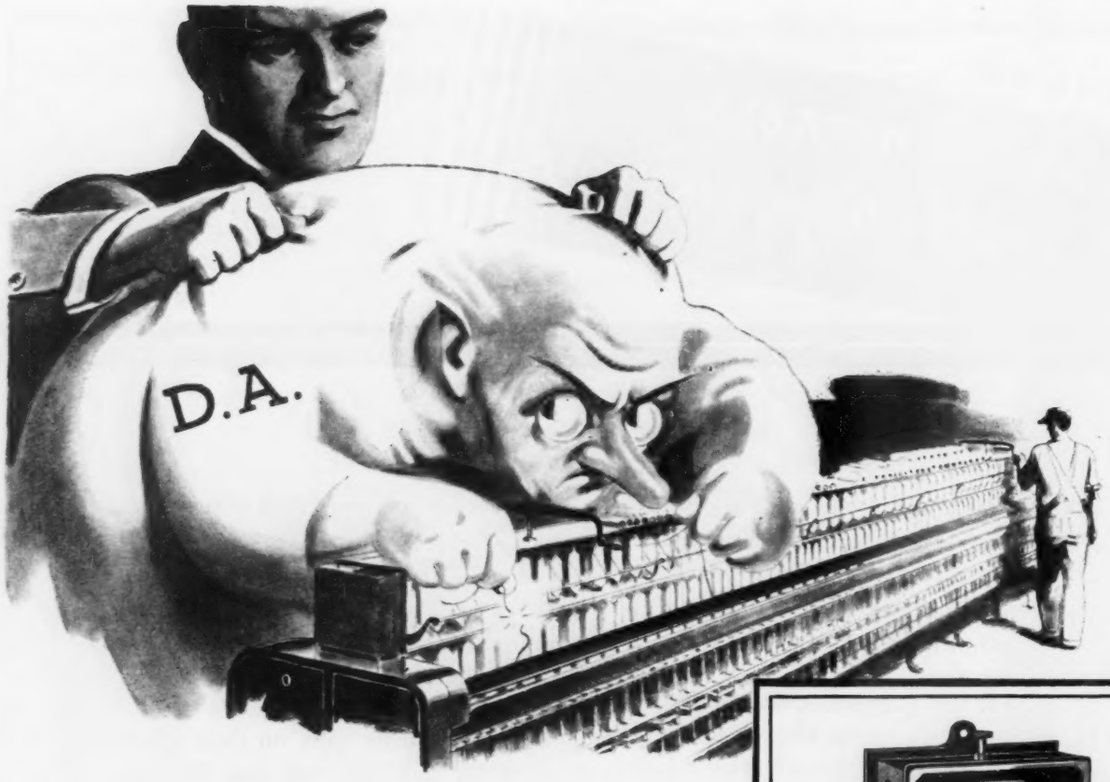
In other words, the mill is now in a position to STAY with the MARKET. They have SOMETHING TO BITE ON, while waiting for the MORE ABUNDANT LIFE to gelatin, which doesn't make them TOO UNHAPPY. . . .

And as every good story must have a MORAL, but without personal reflections on our very good friends who could SEE a GOOD THING, here it is: . . . . . .

"They said it couldn't be done; but he, poor fool, didn't know it, so he went ahead and did it."

WHITIN MACHINE WORKS

CHARLOTTE • WHITINSVILLE, MASS. • ATLANTA



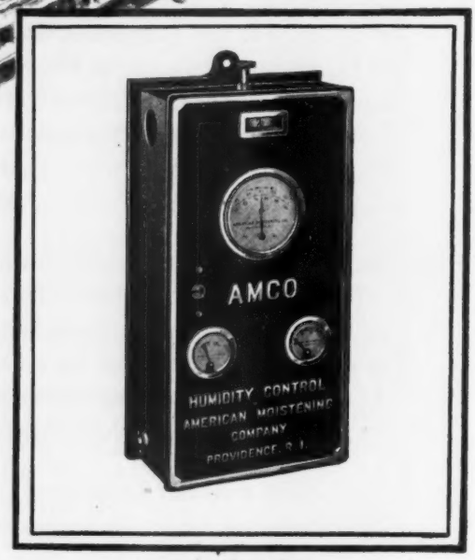
D. A.
DRY AIR

RAISES HAVOC WITH PRODUCTION

High speed machinery stifled by dry air cannot measure up to the standards you have a right to expect.

Only through Adequate Humidification can this condition be corrected and full operating efficiency obtained.

Adequate Humidification is a technical engineering problem requiring the services of specialists. For over 47 years AMCO Devices have combined to solve every humidification problem of the textile industry.



AMCO

HUMIDITY CONTROL

The superiority of the AMCO Humidity Control is due to the sensitivity of the employed hygroscopic element. Control of relative humidity to within very close limits is assured. Life of the element is practically unlimited.

Catalog describing this and other AMCO Equipment readily available.

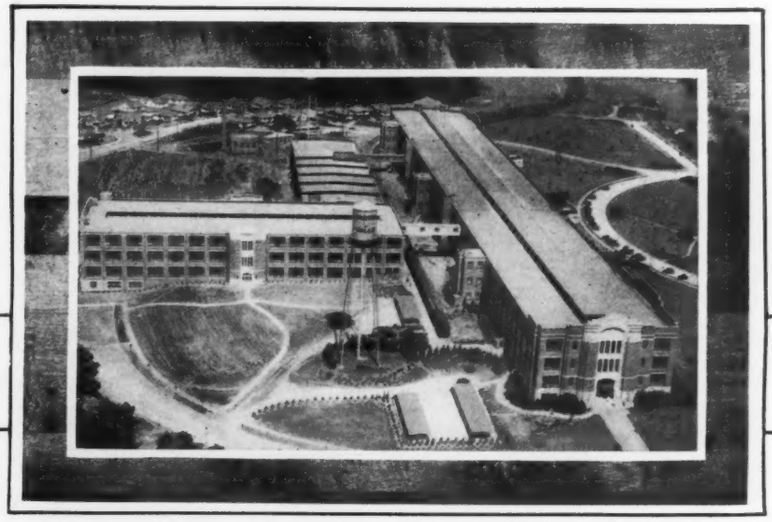
IF IT'S A PROBLEM OF HUMIDIFICATION CALL IN THE AMCO ENGINEER

AMERICAN MOISTENING COMPANY

BOSTON, MASS.
ATLANTA, GA.

Established 1888
PROVIDENCE, RHODE ISLAND

CHARLOTTE, N. C.
GREENVILLE, S. C.



Martha Mills of the B. F. Goodrich Company, Silvertown, Ga.

Robert & Company, Inc. Architects & Engineers Atlanta, Ga.

IN 1926—IN 1928—AGAIN IN 1933

—Now over one-half million Sq. Ft. of Hard Maple Flooring used in Martha Mills

WHETHER you're building a new mill or remodeling the old, the service records of Northern Hard Maple will *prove* what flooring is best for you to use. For in countless mills, where flooring must fill many difficult requirements, Maple floors laid many years ago are still serving their owners with complete satisfaction.

Northern Hard Maple is tough-fibred, tight-grained, resistant to abrasion, lastingly smooth. Will not sliver, splinter or develop ridges—even when subjected to the wear of heavy, rolling trucks with steel casters. Hard Maple actually outwears stone!

It is warm, dry, resilient, comfortable beneath the feet. Reduces fatigue. Simplifies plant alterations—creates no dust injurious to the bearing surfaces of machinery.

Hard Maple is remarkably easy to keep clean and free from lint—requires only brushing. Whether you floor with blocks or strips—with or without pattern—over wood or concrete sub-floors, or over your present floor—Northern Hard Maple will provide a floor that endures and satisfies.

Write for grading rules and complete specifications for laying and finishing MFMA Maple Floors.

"In 1926 when the first unit of the Martha Mills was constructed, Hard Maple was selected for the flooring. In 1928, when a large addition was built, Maple Flooring was again used. In 1933, when Unit B, containing 153,427 square feet of floor space was built, Maple was the flooring installed.
"These facts indicate clearly the entire satisfaction, not only of ourselves, but of the local management and of the B. F. Goodrich Company, the Owners of Martha Mills, with Maple flooring for textile mills."

ROBERT AND COMPANY, INC.
A. J. Cooper—Manager
Structural Engineering Dept

New, penetrating heavy-duty finishes

Seal the surface. Keep out dirt. Resist soil stains. Eliminate scrubbing. Non-slippery. Will not mar, scratch or flake off. Also preservative types which resist the effects of dampness.

★

YOUR LOCAL LUMBER DEALER WILL SUPPLY YOU

with MFMA Maple Flooring—products of the following manufacturers licensed to use the Association trade-mark:

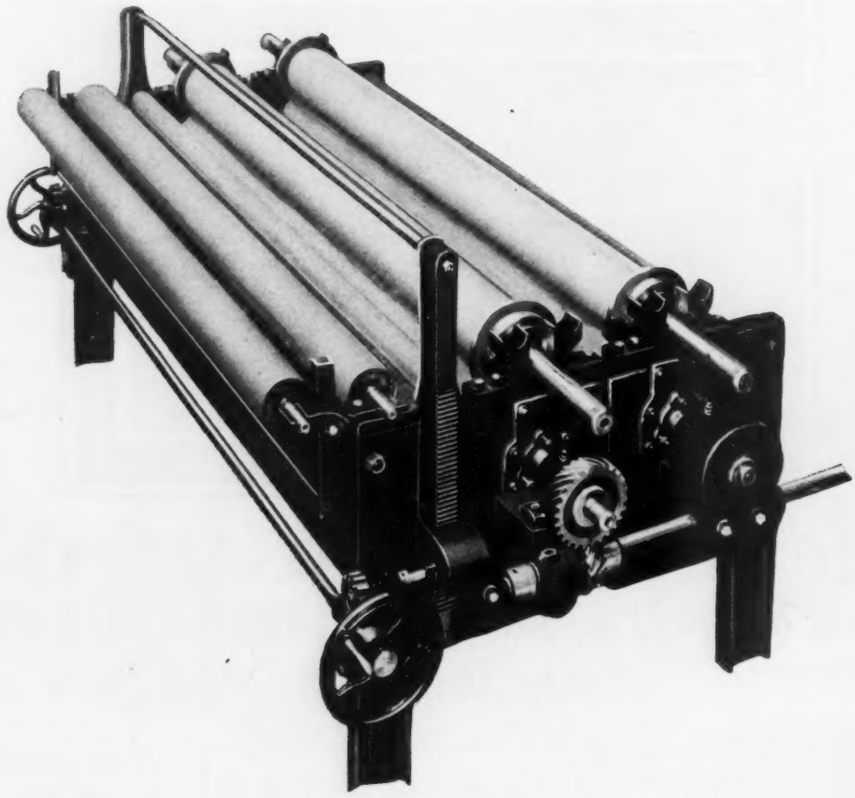
Beck, August C. Company Milwaukee, Wis.
Brown Dimension Company. Manistique, Mich.
Bruce, E. L. Company Memphis, Tenn.
(Mill at Reed City, Mich.)
Cobbs & Mitchell, Inc. Cadillac, Mich.
Connor Lumber & Land Company, Laona, Wis.
(Sales Office, Marshfield, Wis.)
Cummer-Diggins Company Cadillac, Mich.
Farrin Lumber Co., M. B. Cincinnati, Ohio
Holt Hardwood Company Oconto, Wis.
Kerry & Hanson Flooring Co., Grayling, Mich.
Mitchell Brothers Company Cadillac, Mich.
Northwestern Cooperage & Lumber Co. Gladstone, Mich.
Oval Wood Dish Corp. Tupper Lake, N. Y.
Robbins Flooring Company, Rhinelander, Wis.
Sawyer Goodman Company Marinette, Wis.
Stephenson Company, I. Wells, Mich.
West Virginia Pulp & Paper Co. Cass, W. Va.
Wells, J. W. Lumber Co. Menominee, Mich.
Wisconsin Land & Lbr. Co., Hermansville, Mich.
Yawkey-Bissell Lumber Co., White Lake, Wis.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Bldg., Chicago, Illinois

Let our service and research department assist you with your flooring problems. Write us.

Floor *with* Maple

The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods.
This trade-mark is for your protection. Look for it on the flooring you use. . . . **MFMA**



WEST POINT SIZING VATS

Vat ends of cast iron. Body of cypress. Copper lined. Extra heavy copper size rolls with bronze heads and special expansion sleeves to prevent breaking of head from roll and consequent trouble from leaks.

Squeeze rolls of specified weight with bronze flanges at ends.

Single or triple brass immersion rolls.

Steam supplied by brass perforated pipe.

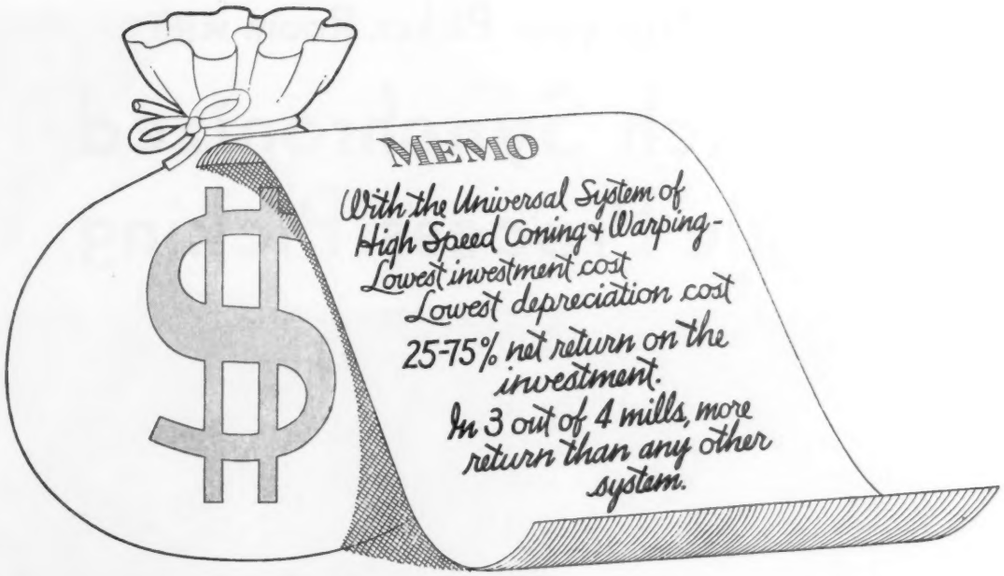
Bevel or spiral gear drive.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

Manufacturers special machinery, loom beams, heads and barrels, textile machinery repair parts


MEMO
With the Universal System of High Speed Coning & Warping -
Lowest investment cost
Lowest depreciation cost
25-75% net return on the investment.
In 3 out of 4 mills, more return than any other system.

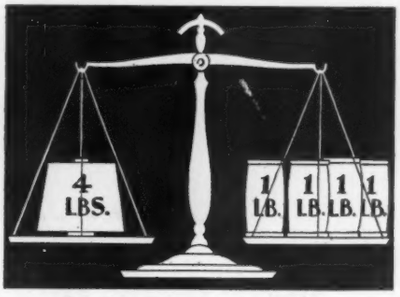
MEMO FOR THE MAN WHO *Holds the Purse Strings*

Treasurers, stock-holders, directors, bankers, and mortgagers will take a close look at the advantages of high speed warping if they first know a few dollar-sign facts.

To them, the fact that the Universal System of High Speed Coning and Warping is the lowest-cost high speed system and returns 25-75% of its investment replacing slow speed warping is more important than the mechanical details which make possible such savings. Also, the fact that this return is, in 75% of the cases, higher than with any other system is reason for their being interested in a definite estimate of savings and investment.

Meanwhile, to production men, we can say that such savings are possible because

(1) Winding operators have higher production than spooling operators because uniform yarn speed eliminates much walking time.



Result: 75% saving in handling and creeling.

(2) Large 4-lb. cones instead of small 1-lb. spools save the winding operator 75% in handling time. Also save 75% in cost of trucking and cost of creeling the warper.

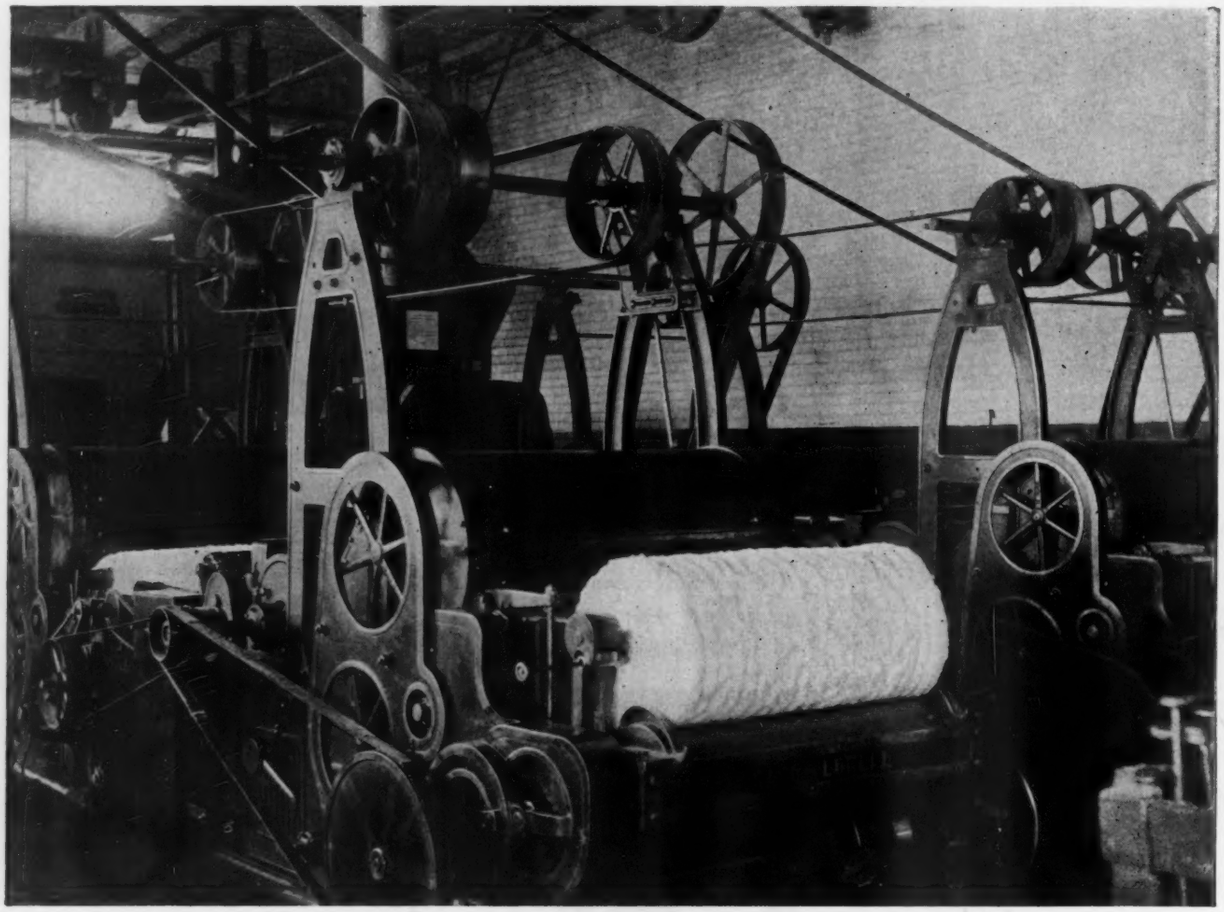
(3) Weave room production is increased and cost of weaving reduced because spooler kinks and lost and crossed ends are eliminated from the loom beams.

Here's a suggestion for production men who believe in high speed warping, yet find it hard to convince financial management to make the investment. Tear out this page and place it on the desk of the man who controls your finances. Then suggest that a Universal representative call in order to prepare an estimate of savings and investment. Address Dept. A, Boston.

IN 3 OUT OF 4 MILLS MORE NET RETURN
Universal System of High Speed Coning and Warping
UNIVERSAL WINDING COMPANY
BOSTON
NEW YORK · PHILADELPHIA · PROVIDENCE · SPRINGFIELD · UTICA · CHARLOTTE · ATLANTA
1738

Modernize your Picker Room with

Aldrich Synchronized Single Process Picking



The most widely used single process picking system in the Textile Industry.

Simple—Inexpensive—Efficient—

Made and Installed by

AldricH MachinE WorkS

Greenwood, South Carolina

SERVICE

THE TEST OF RESPONSIBLE MANAGEMENT

Aberfoyle *Durene* Yarns

Manufacturers who recognize the importance of security rely on Aberfoyle Manufacturing Company for complete satisfaction in much the same way that they rely on Aberfoyle Durene Yarns for competent performance.

For the name Aberfoyle is synonymous with reliability. It is a symbol of responsible management . . . of dependable service in normal times or in an emergency.

aberfoyle

MANUFACTURING COMPANY

123 SOUTH BROAD STREET, PHILADELPHIA, PA.

REPRESENTATIVES IN LEADING TEXTILE CENTERS THROUGHOUT THE WORLD

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.
CARD CLOTHING

SERVICE and DELIVERY ....saves costly delays

A mid-western mill writes, "The way you shipped the clothing separately for each card facilitated getting the clothing in the cards promptly, and all boxes were correctly and carefully marked. The delivery was made exactly on time. I am convinced that no other concern could have handled the order as you did."

Another mill reports, "I appreciate beyond words your special consideration and service."

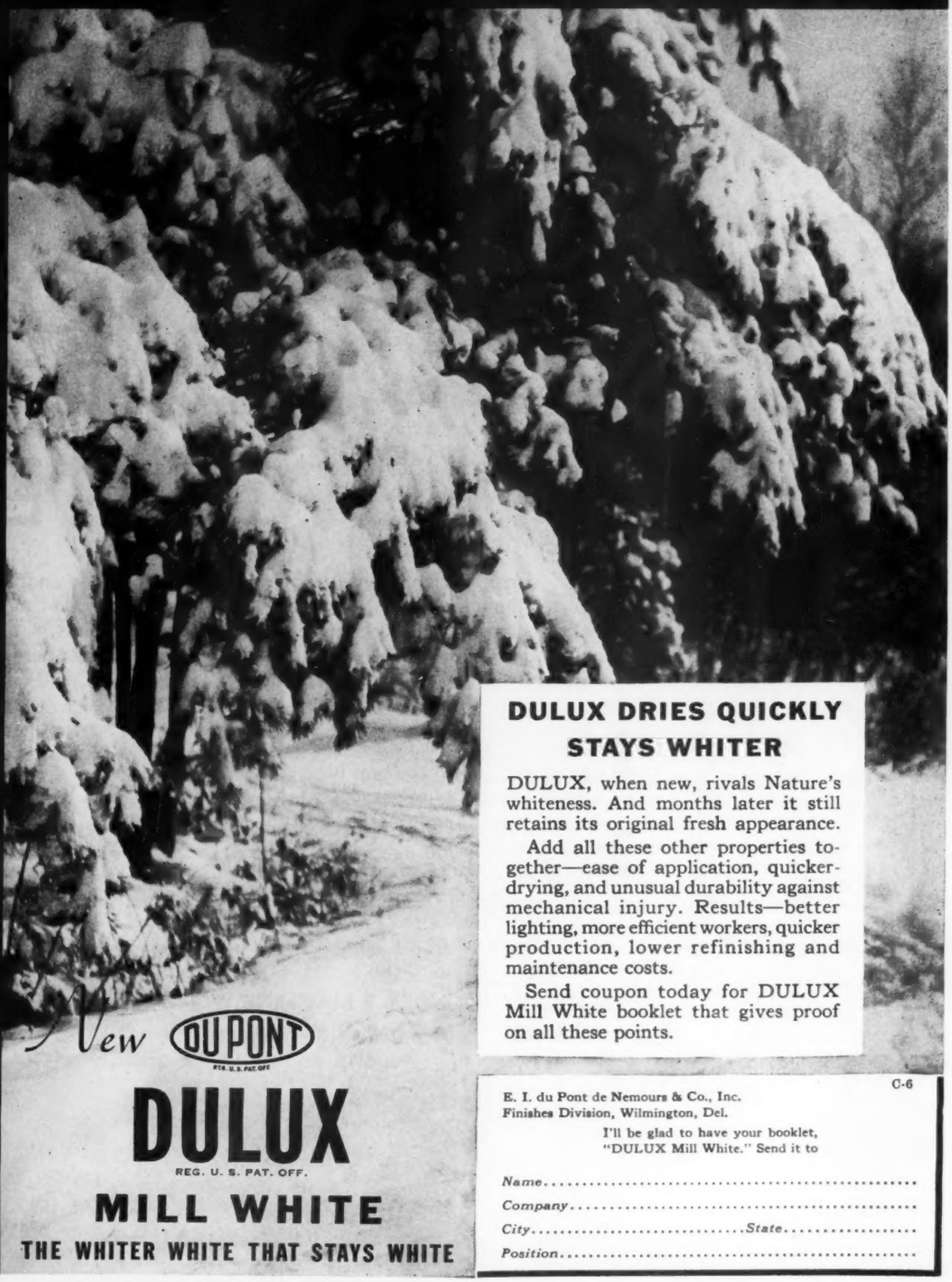
Our policy from the beginning has been to make a product which we would be proud to use ourselves, if we were running a textile mill. We try to keep an adequate stock of regular sizes and kinds of Tuffer Card Clothing in reserve for quick delivery. If a special size or kind is not in stock, every facility is exercised to manufacture quickly. Order from our nearest office.

HOWARD BROS. MFG. CO.
HOME OFFICE AND FACTORY: **WORCESTER, MASS.**
So. Plant: 244 Forsythe St., Atlanta, **Branch Offices:** Philadelphia, Dallas, Washington

Products: Fillets for Feed Rolls, Lickerins, Tumblers, Strippers, Workers, Doffers, Fancies, and Cylinders, Doffer Rings, Napper Clothing, Strickles, Emery Fillets, Burnisher Fillets, Top Flats Recovered and extra sets loaned, Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant. Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

THIS SNOWY WHITENESS

FOR YOUR WALLS



DULUX DRIES QUICKLY

STAYS WHITER

DULUX, when new, rivals Nature's whiteness. And months later it still retains its original fresh appearance.

Add all these other properties together—ease of application, quicker-drying, and unusual durability against mechanical injury. Results—better lighting, more efficient workers, quicker production, lower refinishing and maintenance costs.

Send coupon today for DULUX Mill White booklet that gives proof on all these points.

New DU PONT

REG. U. S. PAT. OFF.

DULUX

REG. U. S. PAT. OFF.

MILL WHITE

THE WHITER WHITE THAT STAYS WHITE

C-6

E. I. du Pont de Nemours & Co., Inc.
Finishes Division, Wilmington, Del.

I'll be glad to have your booklet, "DULUX Mill White." Send it to

Name.....

Company.....

City.....*State*.....

Position.....

3 REASONS WHY HENDERSON REPAIR PARTS SAVE MONEY

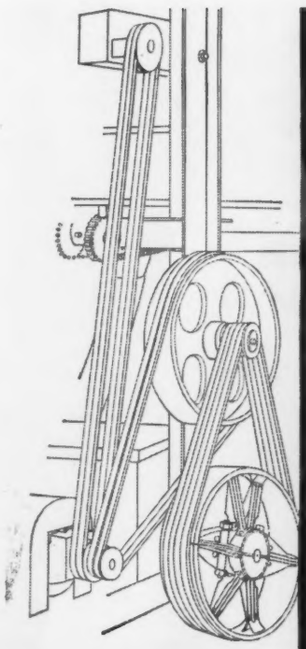
1. Our long experience with textile mill equipment has enabled us to learn the weakest points in present-day textile machinery. Henderson Parts include extra strength at these points. They stand up and last longer under high speeds and strenuous operating conditions.

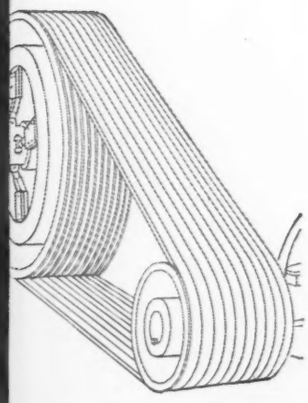
2. Every part is made from a precision pattern to fit the machine for which it was intended. This assures quick and easy replacement of parts as well as efficient operation.

3. A missing part at a rush period may mean a serious loss of production. When you need a part you need it in a hurry. Henderson's close location to Southern mills enables them to save much time as well as shipping costs.

Prices gladly quoted on any textile part, large or small.

HENDERSON FOUNDRY & MACHINE WORKS, HAMPTON, GA.



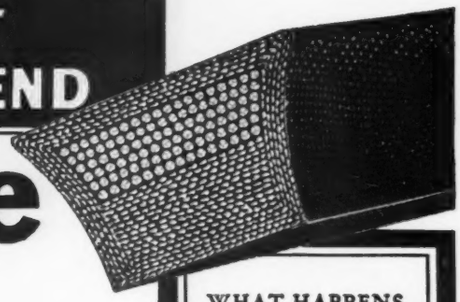


See How a V-BELT CHANGES at the BEND

That's WHY the

Concave Side

Saves Money



You can actually *feel* a V-belt change shape as it bends.

The top of the belt, being under *tension,* grows *narrower.* The bottom, under compression, *widens.* The effect of this, on a straight-sided belt is shown in figure 1 (right). Note especially the out-bulge of the sides.

Now, *contrast* this side-bulge with the effect produced in a V-belt having the patented *concave* side (figure 2). The *same* shape-change merely *straightens* the precisely engineered concavity—producing a contour that *exactly fits* the sheave groove.

Clearly, this *exact fit* saves money in two ways (1) No out-bulge at the side means uniform wear, *longer life!* (2) The *full* side wall uniformly grips the pulley, carrying heavier loads without slippage—a big saving in increased drive efficiency.

The Gates Vulco Rope Drive is the *only* V-belt built with the patented concave side.

WHAT HAPPENS
When a V-Belt
BENDS

Fig. 1. *Straight-Sided Belt*

Fig. 2. *Belt with Patented* CONCAVE *Side*

THE GATES RUBBER CO.
Factory Branches:
Terminal Bldg.
HOBOKEN, N. J.
1524 So. Western Ave.
CHICAGO
747 Warehouse St.
LOS ANGELES
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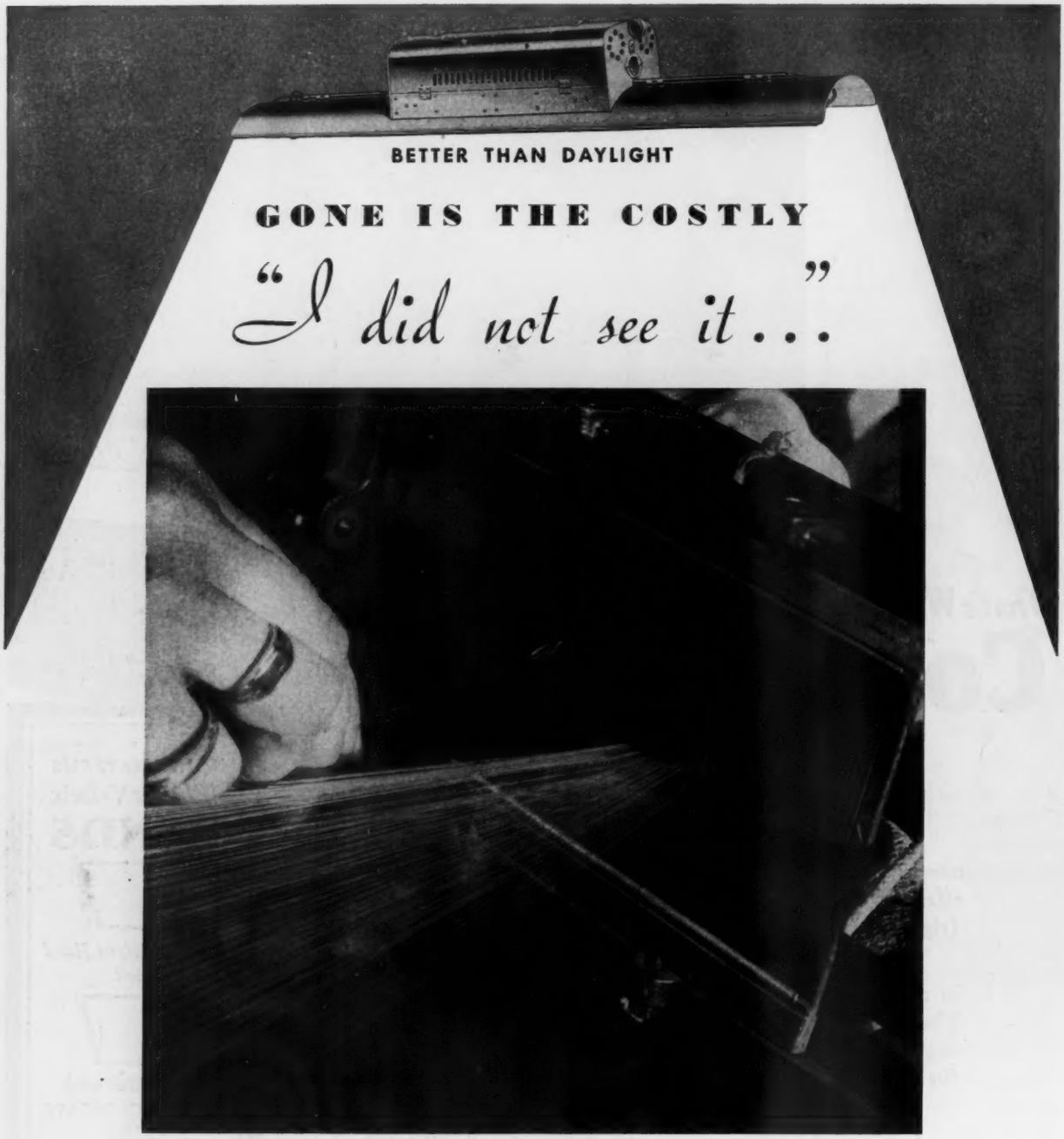
DENVER

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES



BETTER THAN DAYLIGHT

GONE IS THE COSTLY

"I did not see it..."

Better light for better, more productive sight with Cooper-Hewitts caused a mill operator to make this statement. He agrees with the vast majority of silk and rayon mills. Workers see better, without fatigue at high illumination levels as well as low levels of intensity. In fact, even the shadows are luminous under the penetrating, glareless light of mercury vapor.

Threading reeds on warpers or looms is almost effortless. Broken threads can be spotted at greater distances and more quickly always. In fact, all work is easier and quicker, day and night alike, when this cost-reducing mercury vapor light is used in the textile mill.

Thirty years of experience in the application of mercury vapor light to practically every textile operation in woolen, cotton, silk and rayon mills of every description is at your service. We will prove the benefits by a trial installation in any department you choose. You be the judge...General Electric Vapor Lamp Co., 853 Adams Street, Hoboken, New Jersey.

GENERAL ELECTRIC VAPOR LAMP COMPANY

634 Copr. 1934, General Electric Vapor Lamp Co.

THE SOCONY-VACUUM "School of Experience" MEETS FOR ITS 69th YEAR!

ABOVE IS SHOWN a group of Socony-Vacuum Industrial Engineers who met in New York recently to exchange information. Across the table they discussed solutions which they had found to difficult lubricating problems in plants, large and small, throughout America.

This meeting is not cited because it is unusual. This interchange of practical lubricating knowledge has been going on for nearly seven decades. In 63 countries of the world. Thus, Socony-Vacuum service keeps step with industry, worldwide, in its every phase.

THE SUM OF THESE FOUR SAVINGS

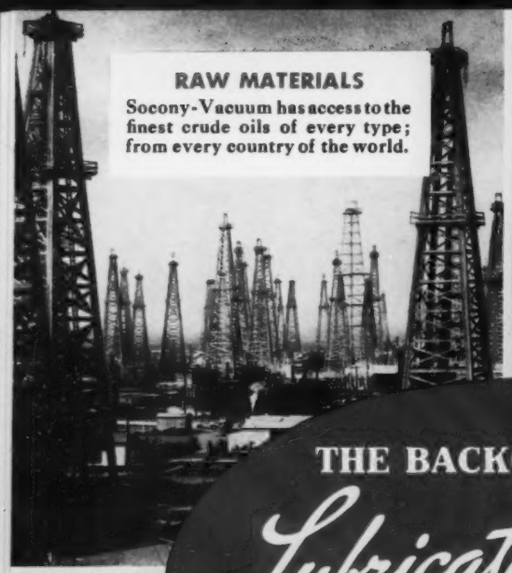
1. REDUCED POWER CONSUMPTION
2. MORE CONTINUOUS PRODUCTION
3. DECREASED MAINTENANCE
4. LOWER LUBRICATION COSTS

= LUBRICATION PROFIT

In 1934 more than 15,000 plants invited our counsel in seeking the answer to bothersome plant problems. Often, our engineers found we had helped on similar jobs in another city, another state, or abroad. Our Industrial Library, showing solutions found for 25,000 difficult lubricating problems, is unrivaled.

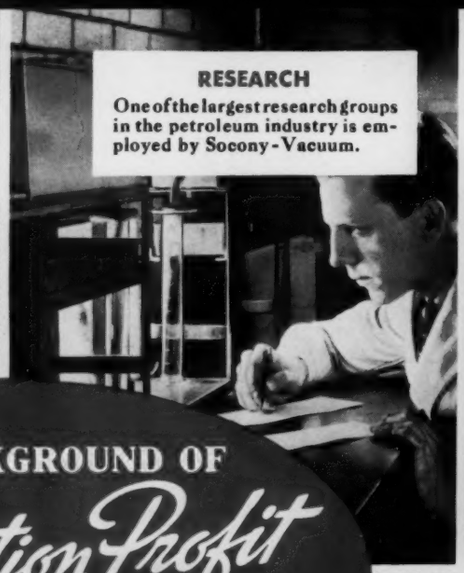
Lubricants "scientifically made—correctly applied"; this is the very foundation of the Socony-Vacuum Lubrication Profit idea. For 69 years "The School of Experience" has contributed to their manufacture, and to their application.

Socony-Vacuum's Complete Line...69 Years of Know How ...are Vital Factors in Building Lubricating Profits Today in Thousands of American Plants.



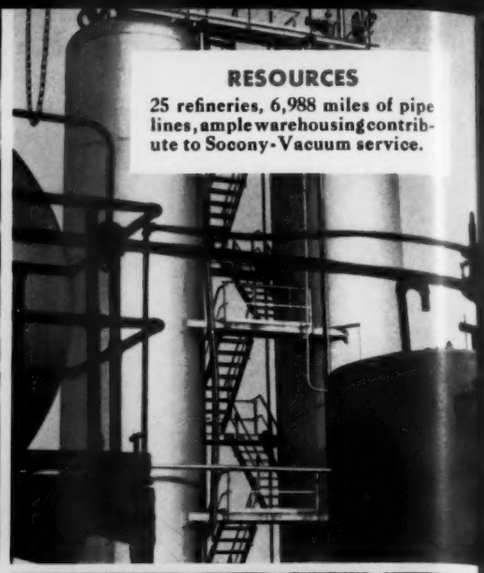
RAW MATERIALS

Socony-Vacuum has access to the finest crude oils of every type; from every country of the world.



RESEARCH

One of the largest research groups in the petroleum industry is employed by Socony-Vacuum.



RESOURCES

25 refineries, 6,988 miles of pipe lines, ample warehousing contribute to Socony-Vacuum service.

THE BACKGROUND OF *Lubrication Profit*

THESE 9 IMPORTANT FACTORS

LUBRICATION DATA

Socony-Vacuum maintains the largest library of industrial lubrication data in existence.

MECHANICAL KNOWLEDGE

Over 2,500 makers of equipment consult with us annually about lubrication for new machinery.

INDUSTRIAL KNOWLEDGE

Socony-Vacuum engineers are in constant contact with 15,000 industrial plants in every line.

A COMPLETE LINE

No matter what the industrial requirement, we can meet it. Socony-Vacuum service does not need to compromise.

A PROGRESSIVE POLICY

Industry almost always finds that the controlled use of high-grade Gargoyle Lubricants pays for itself many times over and that they actually cost less to use than ordinary lubricants. But for such equipment as does not justify the highest-grade lubricants, Socony-Vacuum engineers will recommend a lower-priced lubricant consistent with true economy.

Socony-Vacuum, with a complete line of products, can supply lubricants best fitted for requirements of the individual lubricating job.

SOUND ENGINEERING

One large American buyer says: "Your men know more about *their* business and more about *ours* than anyone we have dealt with."

SOCONY-VACUUM OIL CO

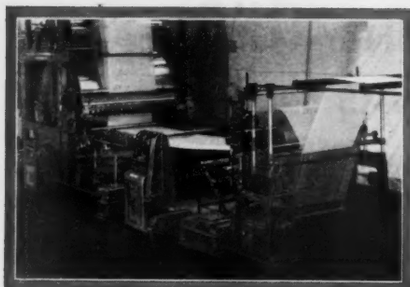
INCORPORATED

STANDARD OIL COMPANY OF NEW YORK • VACUUM OIL COMPANY • WADHAMS OIL COMPANY
WHITE STAR REFINING COMPANY • LUBRITE REFINING CORPORATION • WHITE EAGLE OIL CORPORATION
MAGNOLIA PETROLEUM COMPANY • GENERAL PETROLEUM CORPORATION OF CALIFORNIA

GARGOYLE
Lubricants

★ ★ ★

LOOK TO REEVES FOR *Accuracy* IN SPEED CONTROL

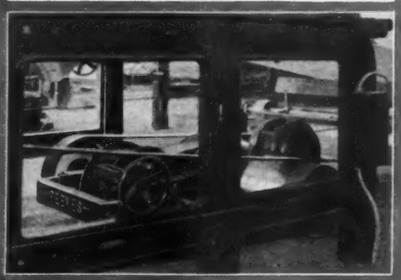


Close up view of REEVES Variable Speed Transmission, with individual motor drive, applied to slasher. Permits selection of exactly the proper rate of yarn travel over cylinders to match every changing requirement. Insures pliable, elastic warp because speed variation provided is infinite, instant, accurate and positive.

(Below)

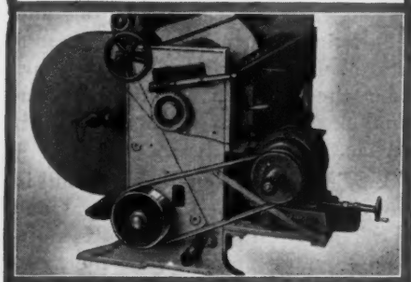
(Above)

Perfect synchronization of speeds must be maintained on this Sanforizing unit to insure uniform tension on cloth as it passes from one section to another. Two REEVES Variable Speed Transmissions do it. Any cloth speed—from 20 to 100 yards a minute—is maintained *with precision* throughout entire range.



(Above)

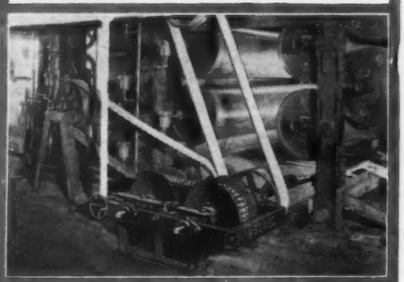
Typical mill installation of REEVES Spinning Frame Drives on filling frames. These sensitive Drives automatically maintain uniform tension and twist on yarn from empty to full bobbin, giving more uniform yarn, higher breaking strength and faster production. Automatic controls for filling, combination or warp build.



(Above)

A REEVES Vari-Speed Motor Pulley is used to vary speeds on this new Rayon Warper. Applied directly to extension of standard motor shaft, this simple, compact REEVES unit provides any speed over 3:1 ratio. Speed changes effected by turning convenient handwheel control.

Vertical enclosed design REEVES Transmission—one of many modern units in the complete REEVES line.



(Above)

Any slippage in a speed control device regulating dry cans results in spoilage and cannot be tolerated. Hence the REEVES Transmission is used on this equipment. Speeds are instantly adjusted to meet accurately such variable factors as weight of cloth, moisture content, drying time.

ACCURACY in a variable speed control unit is absolutely essential in textile processes to insure smooth, fast, quality production. There must be *no* slippage—*no* fluctuation. And speeds must be infinitely and *accurately* adjustable.

Look to REEVES for absolute accuracy in variable speed control. REEVES Variable Speed Transmissions are sensitive, positive and accurate to fractions of an R. P. M. *over their entire range.* They maintain any speed setting as long as desired, without slippage and without fluctuation—no matter how fast or slow the speed or what the load. And their high transmitting efficiency conserves power.

In recognition of this accuracy and efficiency, most manufacturers of textile machines provide REEVES speed control units as standard equipment. REEVES Transmissions are also easily applied to machines now in service. Available in a complete line—a wide range of designs, sizes, speed ratios and controls (manual, electric remote or entirely automatic), insuring correct application for any requirement.

REEVES PULLEY COMPANY
COLUMBUS, INDIANA

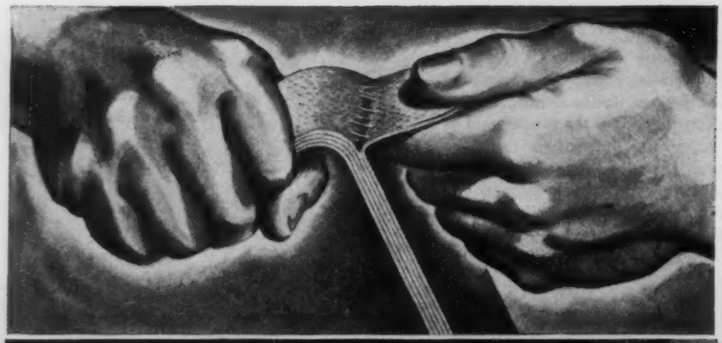
Send Catalog T-99, containing valuable information on applying variable speed control to textile machines. (6-35)

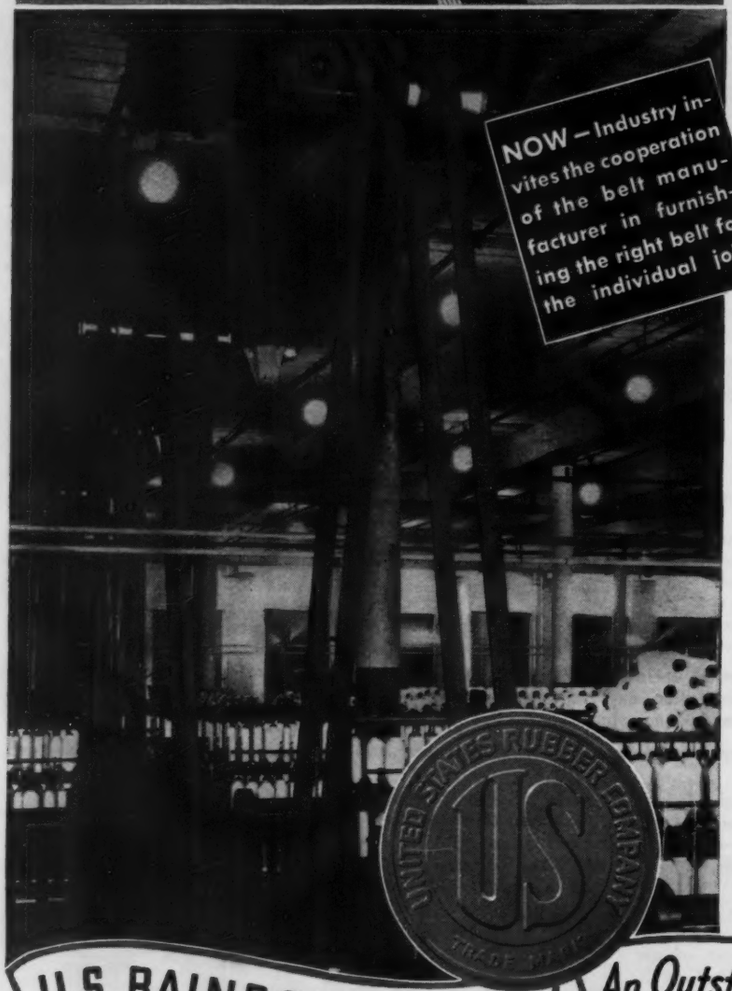
Name.....

Company.....

Address.....

When muscles bought belts




NOW—Industry invites the cooperation of the belt manufacturer in furnishing the right belt for the individual job.
UNITED STATES RUBBER COMPANY
US
TRADE MARK

ONLY ONE FEATURE WAS PROVED . . .

A strong bond between plies is only one factor in over-all belt quality.

ONLY a few years ago buyers thought they could determine belt quality by pulling down a belt's various plies. But we who make transmission belts know that such a procedure merely indicates the strength of the friction rubber.

Any mechanical rubber goods manufacturer may compound strong friction rubber, but it takes a wealth of experience, extensive research facilities and exceptional engineering talent to manufacture belts that will stand up for years under the destructive action of continual flexing, shearing, heat, grit, oil and age.

"U.S." has been signally successful in achieving this end. "U.S." Royal and "U.S." Rainbow belts are famous throughout all Industry for the satisfactory performance accomplished. Extremely long life, freedom from trouble, remarkable driving power and low ultimate cost have won them the high regard of engineers everywhere.

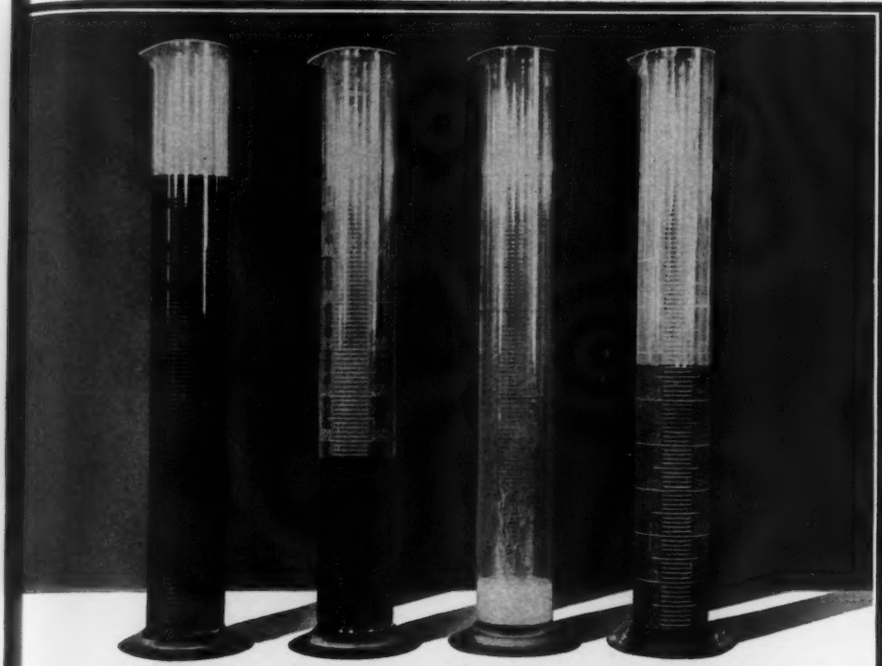
The long experience of "U.S." in advising on the selection of the proper belt, as to quality, ply and cover thickness is available to you without obligation.

United States Rubber Company
1790 Broadway New York, N. Y.
Stocks in all Industrial Centres

U.S. RAINBOW BELTING An Outstanding Value of the United States Rubber Company

New GULFLUBE MOTOR OIL

Refined by Gulf's Multi-Sol Process

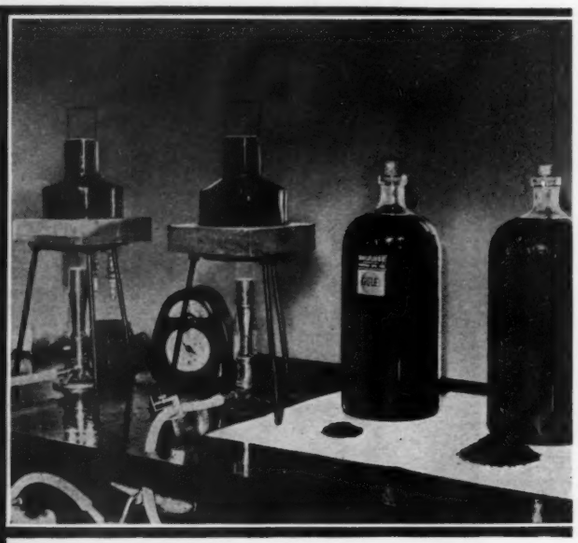


Above is a sample of the original charge of lubricating stock as it goes to the Multi-Sol plant.

Here is the quantity of carbon and sludge forming impurities removed by the Multi-Sol process.

The third test tube contains the solid paraffin wax removed by this efficient refining process.

Above is shown the quantity of the pure Gulflube Motor Oil after dewaxing, filtering, etc., secured from the original lubricating stock fractionated from the crude.



The photograph above shows the quantity of carbon that is removed by the Conradson carbon residue test when applied to a gallon of the new Gulflube Motor Oil and a gallon of another widely distributed brand of motor oil.

Above is a general view of Gulf's new Multi-Sol plant at the Girard Point Refinery, Philadelphia, Pa.

6 REASONS WHY

NO OTHER MOTOR OIL OF ITS PRICE GIVES YOU *ALL* THESE QUALITY POINTS

1. HIGHER MILEAGE—high resistance to oxidation—non-sludging—extra long life.
2. LOW CARBON RESIDUE shows premium quality for paraffinic base oil.
3. EASY STARTING and resistance to heat due to high true viscosity index.
4. ZERO POUR TEST—wax actually removed—no wax crystal poisons added.
5. HIGH FILM STRENGTH—a pure natural mineral oil—no injurious compounds added—will not corrode new alloy bearings.
6. ECONOMICAL LUBRICATION due to these quality points.

FLEET OPERATORS CAN NOW USE A PREMIUM QUALITY OIL WITHOUT PAYING PREMIUM PRICE.....

[The new Gulflube is the only motor oil made by this process and sold at 25c per quart at service stations.]

NOW truck and commercial car operators can afford to use a premium quality motor oil!

The new Gulflube motor oil, made by Gulf's Multi-Sol process, is now available to fleet operators at no higher price than they are accustomed to paying for oils refined by less efficient methods.

The Multi-Sol process makes Gulflube *a premium oil in every respect.* In this process, solvents of two opposite actions are used. One action dissolves out the impurities in the lubricating stock refined from the crude oil—tars, gum and carbon forming compounds—and settles them to the bottom of the extraction tanks. The other action selects the desirable parts of the oil and floats them to the top. This selected oil is then "skimmed off," thoroughly dewaxed and filtered —to form the finest motor oil ever offered at its price.

Try this extraordinary new oil in your equipment. You will be pleased with the results.

GULF REFINING CO., Pittsburgh, Pa.

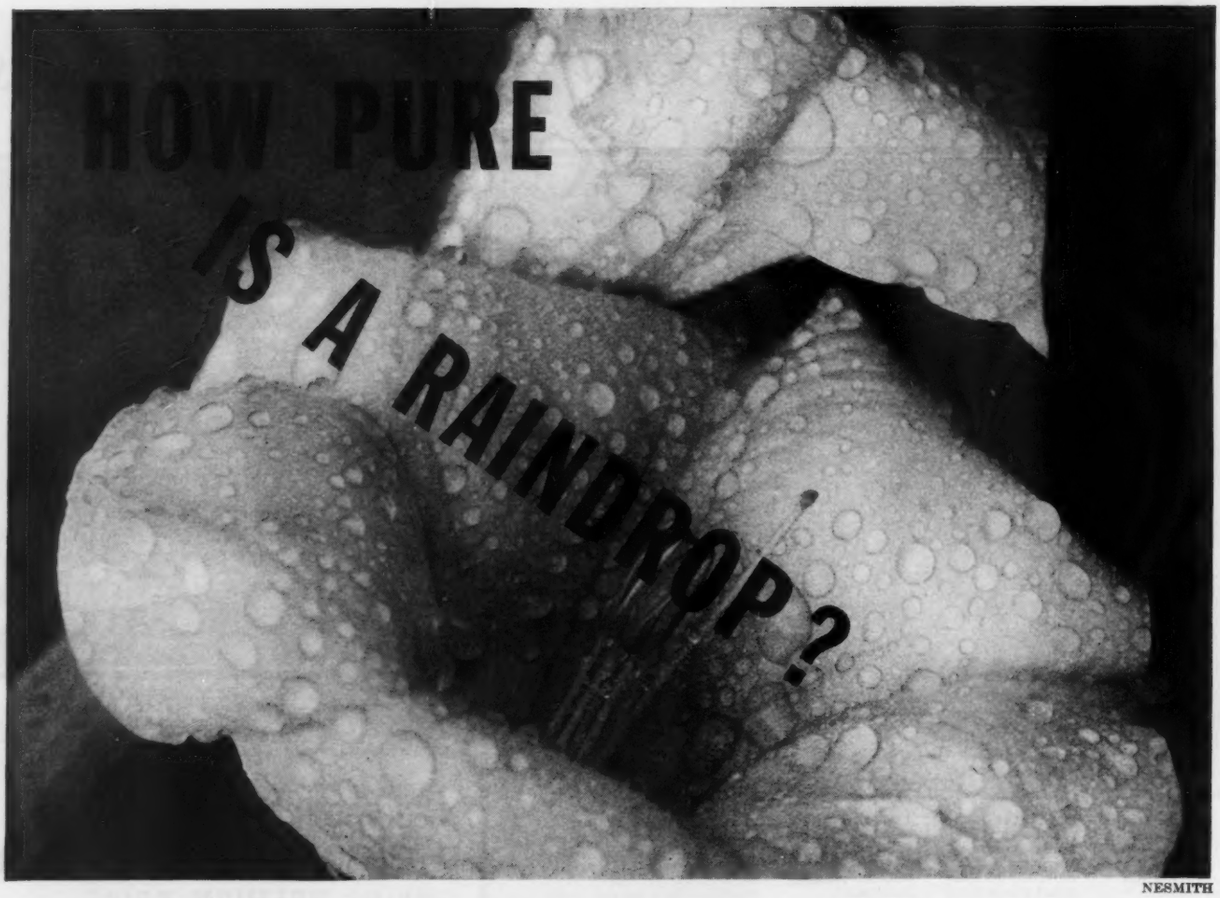
District Sales Offices: Boston · New York · Philadelphia · Atlanta · New Orleans · Houston · Pittsburgh · Louisville · Toledo

GULF

GULF REFINING COMPANY .C.-6
3800 Gulf Building, Pittsburgh, Pa.

Please send me complete information and price quotations on the new Gulflube Motor Oil.

Name .....
Title .....
Company .....
Address .....



NESMITH

• It depends. In the dusty midwest, rain has been muddy and brown. In the mountains, it's cleaner. Over the mill towns of certain states, rain water is full of harmful corrosive agents.

So it is with all water supplies. They vary with the seasons and the localities. But textile wet-processing requires a *constant* supply of *uniformly* clear, soft, colorless water for proper cleansing and dyeing of present-day fabrics. The only way to make it uniform is to condition it.

Research engineers will tell you that practically *all* natural mill waters must be properly conditioned to enable finished goods of high quality to be produced.

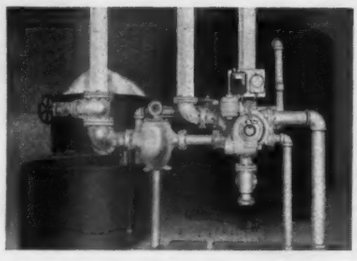
That's why more than 1,000 up-to-date textile mills have *regulated* their water supplies with Permutit Water Conditioning Equipment. The cost of this equipment has already been paid back in savings . . . usually within two years, often in a single year's time.

And the many benefits of this conditioned water continue year after year. There are fewer reruns and rejections. Soap, soda and bleach are saved. Boiler tube repairs and replacements are reduced to a minimum. There is less yarn breakage. Finished goods are softer to the touch, and even all over in their color.

Our free booklet, "Reducing Textile Costs and Troubles," tells you more about these benefits . . . and how they can be had in your mill, too. Let us send you a copy. And if you wish, we'll make a free analysis of your water supply and recommend proper treatment. Write The Permutit Company, 330 West 42nd Street, New York.

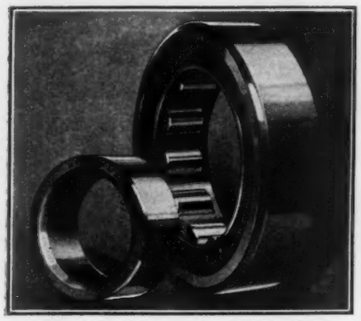
Permutit

Water Conditioning Equipment

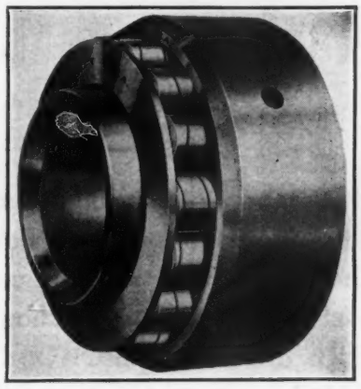


FULLY AUTOMATIC WATER SOFTENER avoids human error. No over-running, no under-regeneration. Automatic controls can be applied to existing equipment. Write for bulletin. Also ask for information about Super-Zeo-Dur, the improved greensand zeolite that saves salt and has 75% greater capacity. Remodeling present equipment pays big dividends.

IT'S A SIMPLE AND EASY MATTER TO GET HYATT ROLLER BEARINGS IN ALL YOUR TEXTILE MACHINERY



Here is the Hyatt Hy-Load Roller Bearing which employs solid rollers.



This is the Hyatt Roller Bearing of the helically wound roller type.

There is a size and type of Hyatt Roller Bearing for every textile application. Specify Hyatt Roller Bearings by name on all your machinery orders.

So why handicap your new machinery investment with plain bearing equipment which was obsolete 10 years ago?

—and Bear This in Mind

No matter what claims a manufacturer may make regarding modern machine design, no machine is really modern which still uses plain, cast-iron bearings at vital bearing positions.

We shall go further and say that in 1935 no machine is truly modern unless it employs anti-friction bearings.

That means HYATT ROLLER BEARINGS—the bearings which are giving such dependable service in all textile applications. Hyatt Roller Bearing Company, P. O. Box 476, Newark, N. J.

H Y A T T
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

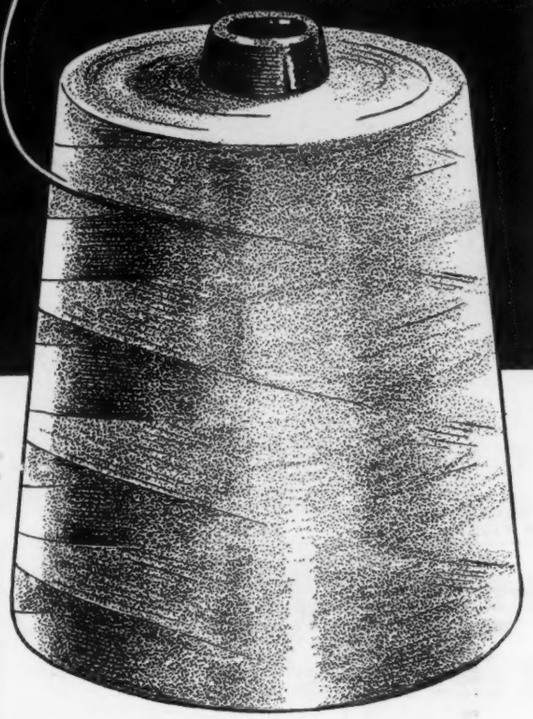
Modernize with MONOBELT

TODAY IT'S SPEED··NOT ROMANCE!

YOU WOULDN'T expect this "two seater" asphalt burner to get you places in competition with the modern motor car or the new stream-lined train. You say, "That's an antique; put it in the Museum," and we quite agree. Now, let's look into your plant. Are you trying to force obsolete equipment to compete with modern machinery and efficient modern production methods? Do you expect antiquated drives with old-fashioned belt to give you hi-speed production and down-right economical maintenance? Only better methods produce better results. The way to low operating costs and honest-to-goodness production is thru modern drives and MONOBELT. MONOBELT'S range of adaptability is exceeded by no other leather belt. MONOBELT'S consistent record of economical and efficient performance is exceeded by no other leather belt. Modernize with MONOBELT . . . See your dealer or write today for MONOBELT facts and figures.

Alexander Brothers INC.
PHILADELPHIA PENNSYLVANIA
Signal of Merit SINCE 1867
MEMBER POWER TRANSMISSION COUNCIL

Now... hosiery yarns Run Evenly whether on machine 1 DAY or 4



Special NOPCO DIRECT KNITTING OIL

assures uniform tension

WHETHER you condition your yarns or run them dry you will find Nopco Direct No. 1 the proper oil for imparting the necessary pliability to your yarns.

Nopco Direct No. 1 assures uniform and effective lubrication — the result of correct moisture content and oil distribution. It assures uniform tension — a vital factor to good hosiery making. A practical knitting test will speedily prove our contention.

A number of special soaking formulae using Nopco Direct No. 1 knitting oil have been developed by us, and are in use in many leading mills. These formulae — for running either conditioned or dry yarns — can be easily adapted to your mill.

For complete information, just mail the coupon.

MEMBERS OF THROWSTERS RESEARCH INSTITUTE

NATIONAL OIL PRODUCTS COMPANY, INC.

HARRISON, NEW JERSEY

BOSTON CHICAGO SAN FRANCISCO

NOPCO

National Oil Products Co.
Harrison, N. J.

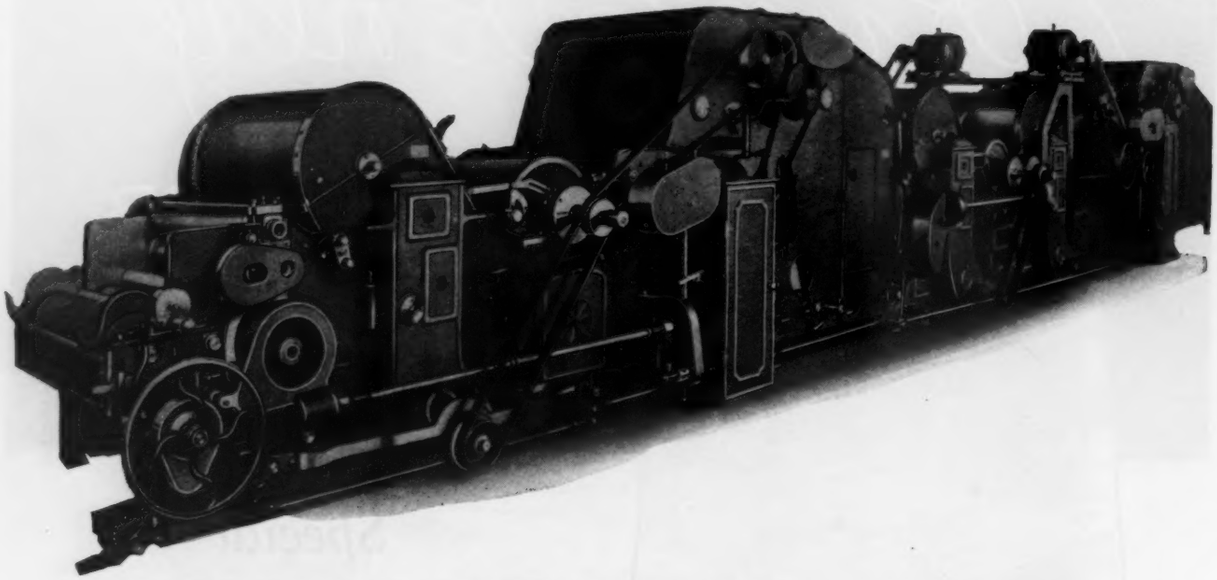
Gentlemen: Please send us complete information regarding Nopco Direct No. 1 knitting oil.

Name _____

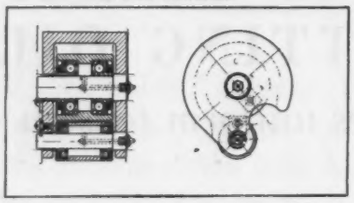
Address _____

Company _____ C-6

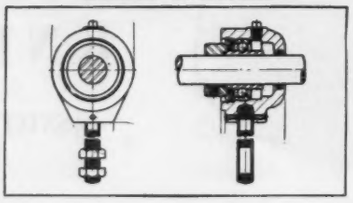
FAFNIRS *Maintain Accurate Settings* on the Picker



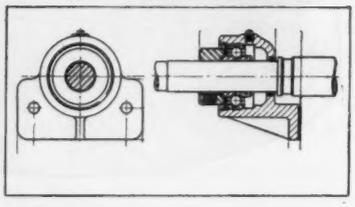
CALENDER RACK ASSEMBLY FOR PICKER



EVENER CONE BEARING FOR EVENER ON PICKER



FAN BOX FOR PICKER



Fafnir Ball Bearings insure accurately maintained settings where accuracy is a primary objective . . . in the picker. As the foundation for even yarn is laid in the picker room, equipping the pickers with Fafnirs provides assurance that the lap will be even in length and constant in yard-for-yard weight.

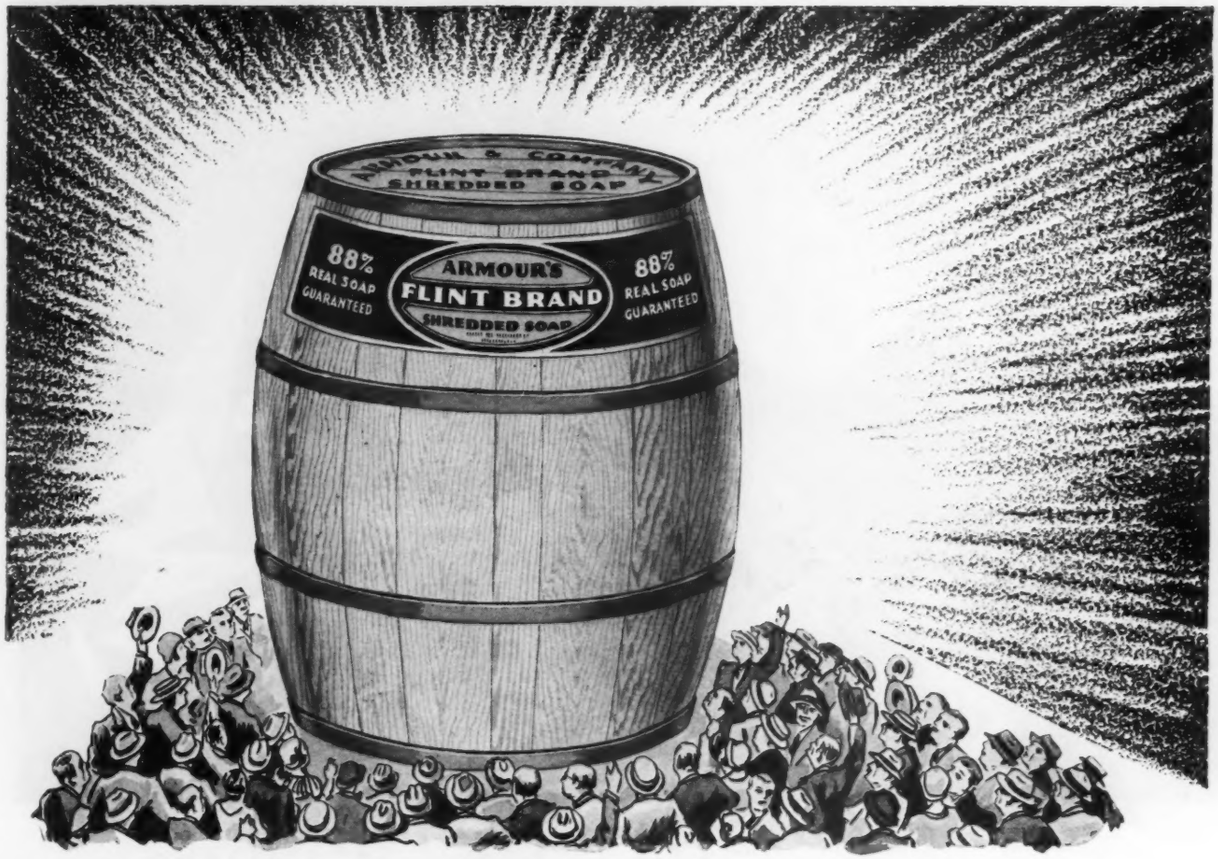
On the *beaters* and *fans,* Fafnirs insure vibrationless operation and constant speed. No oil can be drawn into the beater to gum grid bars and contaminate the lap. Maintenance consists merely of greasing once in three months, and since worn bearings and resetting of shafts are eliminated, the net result is more productive hours and therefore dollars saved.

Fafnir Ball Bearings on the *evener cone boxes* increase belt life and eliminate slippage by reducing friction to a minimum. When the *feeder apron shafts, doffer and stripper rolls* are equipped with Fafnirs, the drag on the evener cone belt is also reduced. Freedom of motion of the feeder shafts and of the *lap rack rolls* means even lap.

From "the most complete line of ball bearings in America," Fafnir can assure the most efficient bearing for every textile machine. Each Fafnir is engineered to meet a definite need. Consult THE FAFNIR BEARING COMPANY, *New Britain, Conn.* Representatives also at Atlanta, Ga. . . . Houston, Texas . . . Charlotte, N. C. . . . Boston, Mass. . . . Dallas, Texas.

Safeguarding Quality

FAFNIR BALL BEARINGS



FLINT SOAP is the Favorite for Cotton Scouring

Other Famous ARMOUR Textile Soaps

Industrial Chips
Topaz Chips
Pure Palm Chips
Pure Palm Solid
Blended Palm Solid
Texscour
Neutral Olive Flakes
Neutral Olive Powder
Olive Oil Solid
Olive Oil Bars
Olive Fig Soap

In Kier Boiling — in cotton dye houses — for soaping vat colors — and in color baths and on re-dyes, Flint Soap has given satisfaction for nearly 30 years.

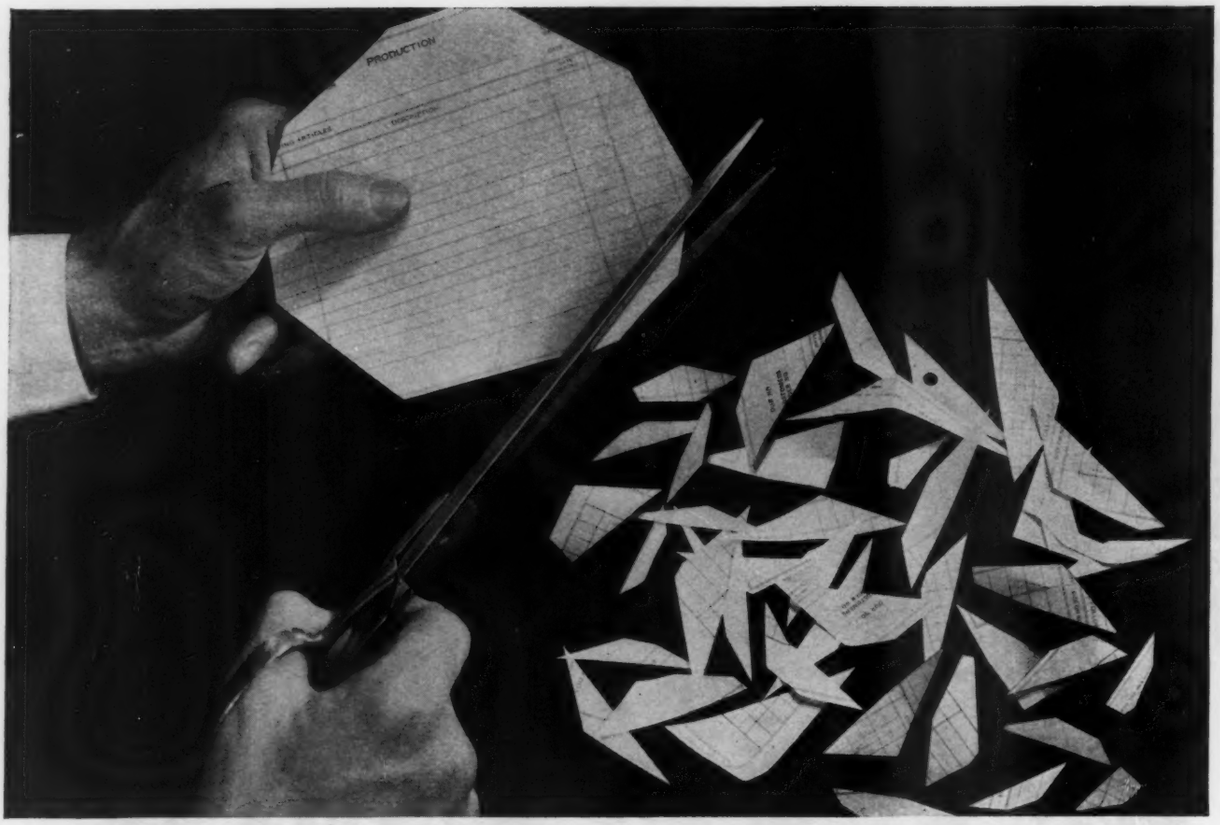
The uniformly high quality of Armour's Flint Brand Shredded Soap is the result of strict, inflexible laboratory control of raw materials and finished product.

Thousands of users can't be wrong. Flint Soap gives maximum soap content (shred form 88% real soap — powder form 92% real soap)—with no waste — and absolute assurance of highest efficiency.

If you are not already using this economical soap — shredded or powdered — you will want to investigate. Armour's 400 branches, covering every section of the country, are your guarantee of prompt delivery from a convenient source of supply.

Write for samples and prices — no cost or obligation.

INDUSTRIAL SOAP DEPARTMENT
ARMOUR AND COMPANY
1355 W. 31st STREET • CHICAGO, ILLINOIS



CUTTING CORNERS

● A capacity for cutting corners is required in the alert plant executive; but many plants today are in danger because corners were cut too closely, too long.

Resolve to listen to your engineer when he reports plant conditions, when he asks for replacement of worn valves, fittings, and piping. Welcome his suggestions. Weigh them carefully.

In the direct steaming system of a midwest plant, Crane engineers recommended a valve entirely different from that in previous use. Maintenance costs were cut from $300 a month to $50. There *may* be an equal opportunity to save in your plant.

Write for the Crane Plant Checkup List. It's free. And there's always a Crane representative as close to you as your telephone who will gladly co-operate in making a survey of your plant.

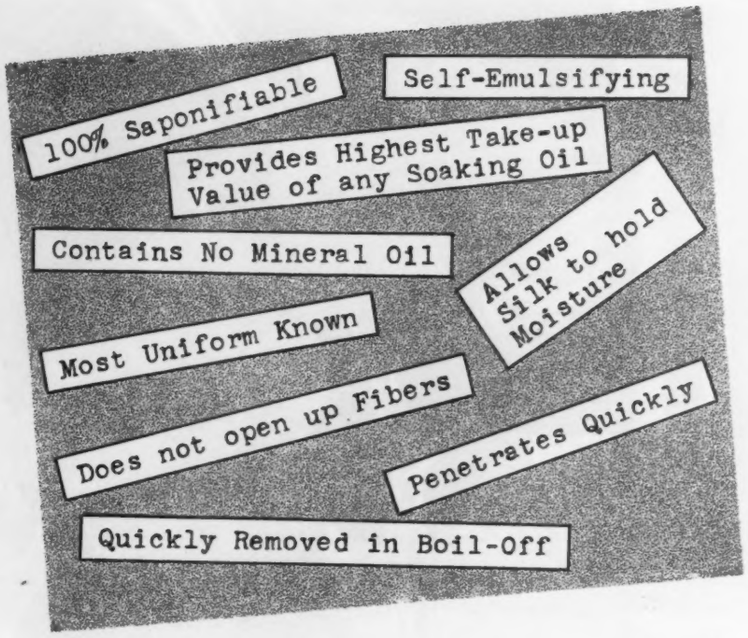
When you specify Crane valves, fittings or piping, you reap the benefit of 80 years of intensive research and engineering in materials and design; the result is enduring strength and precision in every Crane product.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL



What Silk Soaking Oil possesses all these points of merit?

The answer is Houghton's Silklubric. Let the Houghton Research Staff and field men discuss your silk soaking problems with you and arrange for a demonstration. This service is available without cost or obligation, including complete soaking tests, or test of silk for evenness, boil-off and clearance. Write—

E. F. HOUGHTON & CO.
240 West Somerset Street,
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THE HOUGHTON TEXTILE LINE

Includes:

FOR COTTON MILLS
Warp Conditioning
Houghton's Aids—wetting out agents and dye assistants.

FOR SILK & RAYON MILLS
Silklubric
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ALSO
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Textile Leathers for all purposes
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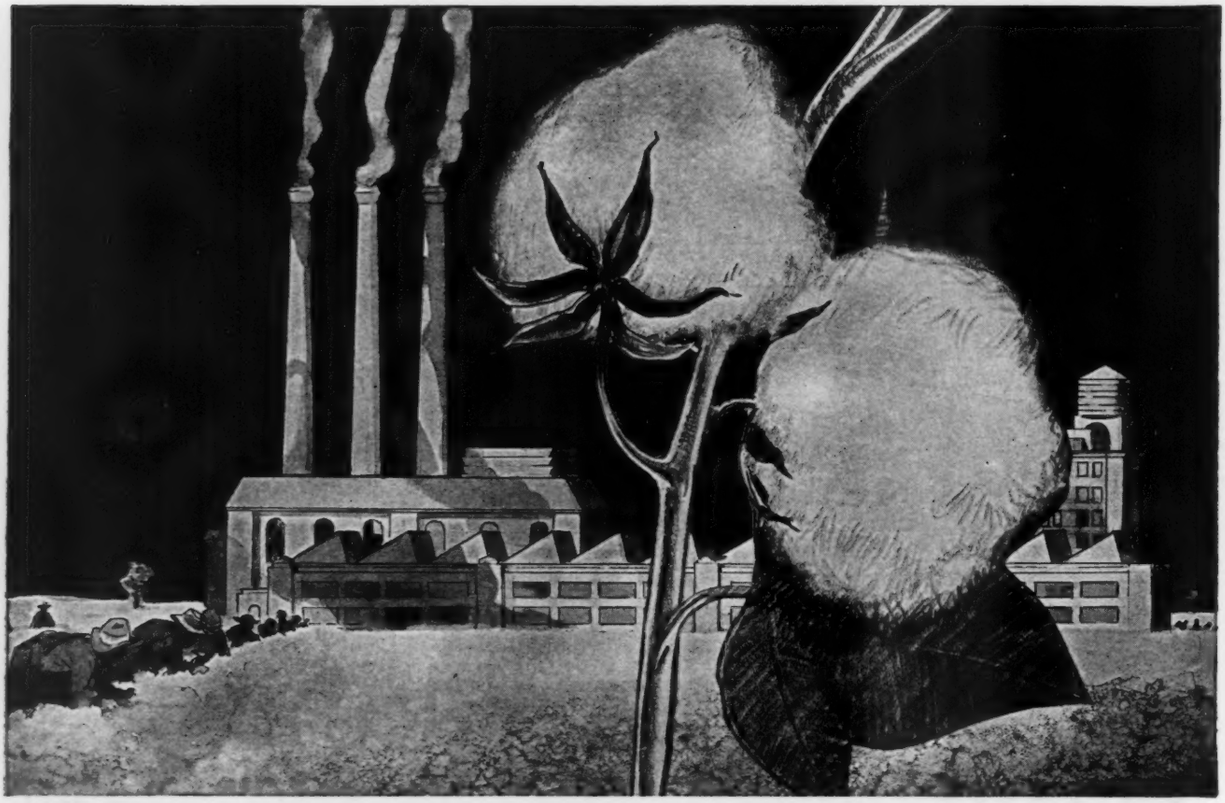
Houghton's SILKLUBRIC



When It Comes To Coal . .

It Pays To Know

Do you know that the fuel you burn is the one brand best suited to the job? Are you cashing in on the economies made possible by a modernized and scientifically selected fuel supply?

The General Coal Company offers the textile field a coal to fit every purpose and every analysis requirement. Everything else being equal, the General Coal plan enables you to take full advantage of its ability to furnish a diversity of fuel requirements from a centralized source of supply.

Each General Coal Company brand stands for the utmost in that particular analysis. Strategic location to your plant means the efficient and expeditious filling of your contract requirements.

GENERAL COAL COMPANY

BOSTON PHILADELPHIA CHARLOTTE, N. C. RICHMOND

DETROIT CINCINNATI NEW YORK PITTSBURGH BUFFALO IRWIN, PA.

GENERAL COAL

Admiralty Coal — The famous New River Smokeless low volatile steam coal

STONEGA — A coal "buy word" in the South for years

GENCO — An excellent stoker fuel

DENDRON RODA — Low ash—high B. T. U. Pulverized Fuels

CROZER — A Standard Pocahontas smokeless low volatile steam coal

PREMIX STOKER — The ideal stoker fuel

CRITERION COAL — A high volatile steam and general use coal

. . *for* WARPS *of greater* SMOOTHNESS, STRENGTH, WEAVABILITY

VELVEEN XX--the original non-congealing starch--imparts a smooth, elastic film to the warp. Because of the unusual smoothness and strength achieved with VELVEEN XX, warps have greater weavability--warp-end breakage is reduced--and harshness is eliminated. VELVEEN XX is especially effective on FINE goods. In a word, this non-congealing starch is recognized by leading mill men as a modern aid to production efficiency.

STEIN, HALL & COMPANY, INC.

EST. 1866

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BOSTON PROVIDENCE CHICAGO PHILADELPHIA CHARLOTTE SAN FRANCISCO
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HEADQUARTERS FOR ALL TEXTILE STARCHES, DEXTRINES, GUMS AND TAPIOCA FLOURS

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These are

SALES BUILDERS

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NEW DESIGNS · REPRODUCTIONS

JACOBS GRAPHIC ARTS COMPANY

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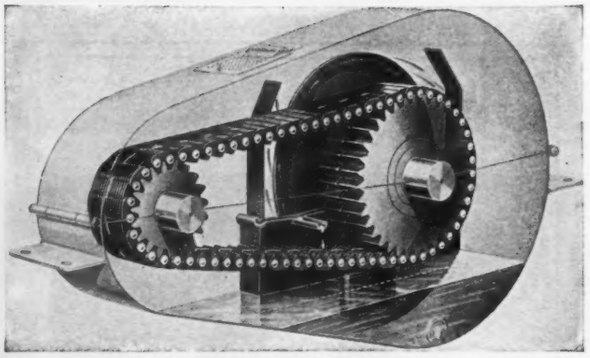
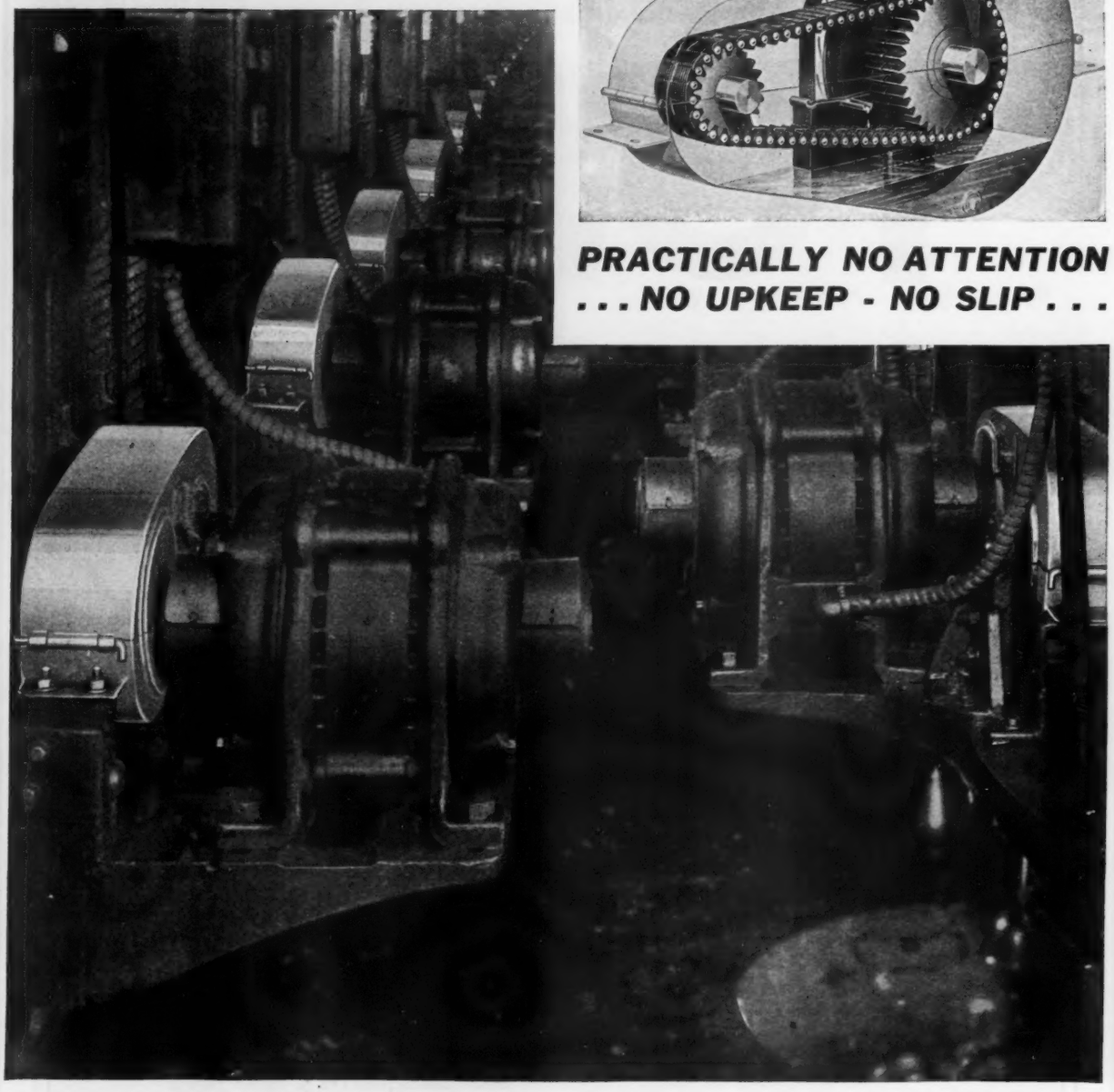
THE DRIVE OF TODAY AND TOMORROW . . . .



PRACTICALLY NO ATTENTION . . . NO UPKEEP - NO SLIP . . .



UNEQUALED in the field of power transmission, Link-Belt silent chain drives have been in service for periods of 5, 10, 15, 20 years and longer. The results:—

Low upkeep expense . . . high production . . . more uniform quality of product . . . no oil leakage (the Link-Belt Tex-Til automatic-lubricating oil-leak-proof casing assures a cool-running drive with drop-by-drop lubrication) . . . definite speed ratios always maintained between driver and driven wheels . . . no slip.

If you buy your drives on the basis of performance and economy, let Link-Belt Silverstreak silent chain drives prove their worth. Catalog.

5305

LINK-BELT COMPANY

The Leading Manufacturer of Positive Power Transmitting Equipment

Philadelphia Indianapolis Atlanta Chicago San Francisco Toronto Boston New York Baltimore Dallas New Orleans Offices in Principal Cities

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVE

POWER

Power used in overcoming friction is wasted.

The *right* oil in the *right* place reduces friction.

Standard Oil lubricants cut power costs.

You can save power--you can save what wasted power costs.

Standard Oil has the experience--and the specialized lubricants--to reduce friction in your plant.

Save power costs.

●

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CHALLENGER

THE BELT THAT ENDURES

★ Severe tests prove the endurance of every Challenger Square Edge Belt. All materials in its construction are tested before it is manufactured—all properties determining its life and efficiency are tested when it is completed. The findings of these scientific tests are recorded in our files and they must show conclusively that our higher established standards have always been met.

There is never any question about the performance of Challenger. Its capabilities have been accurately determined in advance and the responsibility of a great, national organization is right here to back up every claim made for it.

THE REPUBLIC RUBBER CO. YOUNGSTOWN, OHIO

MECHANICAL RUBBER PRODUCTS FOR EVERY INDUSTRIAL REQUIREMENT

ORDER REPUBLIC RUBBER PRODUCTS FROM YOUR DISTRIBUTOR

"We're Enthusiastic"

...SAY THE OWNERS OF THIS 75-FOOT BLEACHER-DYER-WASHER MADE OF

MONEL METAL

"We use Monel Metal in practically every piece of our dyehouse equipment"

OLSON RUG CO.

THAT enthusiasm for Monel Metal is all the more significant when you realize its source . . . the Olson Rug Company, largest makers of rugs, dealing direct with the home.

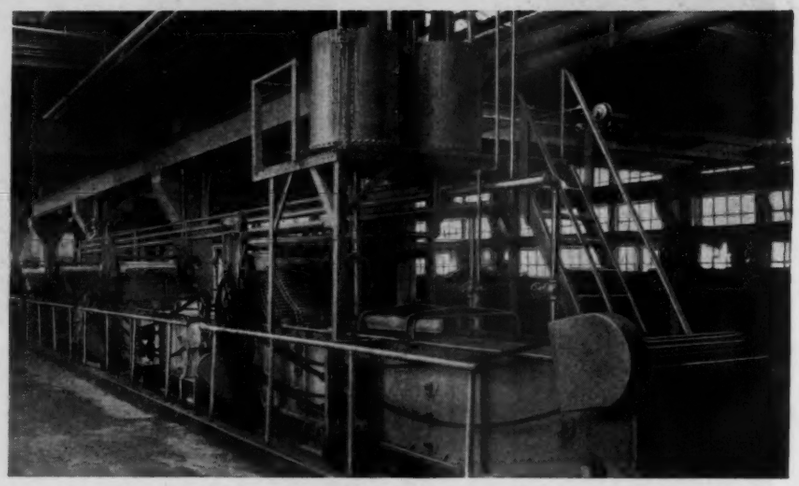
And what a line-up of equipment Olson uses: Monel Metal-lined dye-tanks, bleach-tanks and wash-tanks, Monel Metal continuous conveyor, Monel Metal shafts, rolls, valves and piping, Monel Metal heating coils, angle guides, castings and accessories. Olson built their own equipment.

Olson, as you know, features a wide range of rug colors, and does custom work to each individual purchaser's order. That calls for frequent changes, and for many types of dyeing: direct, acid, basic and acid chrome.

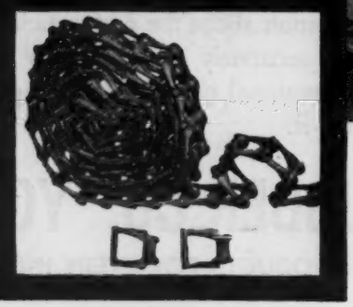
Since Monel Metal resists corrosion from all kinds of dye material, never rusts, and cannot absorb dyestuffs it facilitates all activities at the Olson Rug Company.

It never needs extended clean-ups between batches, nor long boil-outs. Monel Metal is also resistant to the solution used in bleaching, stripping and scouring of wool. Its tough strength exceeds the strength of structural steel; so wear and repairs are reduced to the minimum. And of course there are never any splinters on its smooth, hard surfaces.

If you'd like to know more about the uses of Monel Metal send for free pamphlet, "The Application of Monel Metal and Nickel to Industrial Processing Equipment."



Continuous bleaching, dyeing and washing machine, 75 ft. long x 3½ ft. wide x 3½ ft. deep at the plant of the Olson Rug Company, Chicago, Illinois. Monel Metal is used for all parts of this apparatus which require the use of corrosion-resistant materials. Some of the more important parts for which Monel Metal is used include the conveyor, tank linings for bleaching, dyeing and washing tanks, heating coils and accessory parts. This machine is used for dyeing all types of colors.

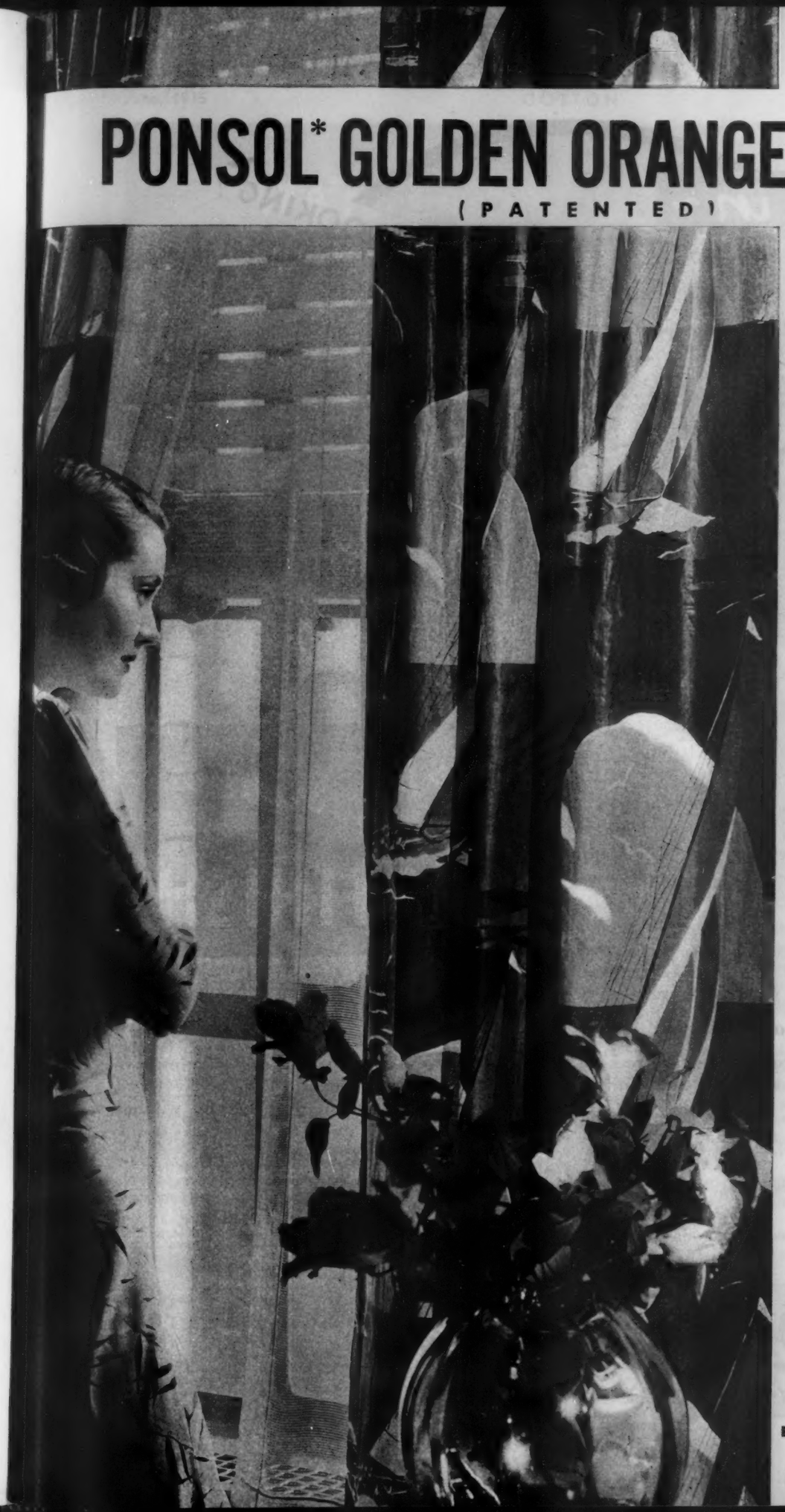


● *Close-up view showing Monel Metal conveyor in continuous bleaching, dyeing and washing machine at the plant of the Olson Rug Company. See other illustration for other details.*

● *Forged Monel Metal conveyor links (2½" pitch). Manufactured by Steel Improvement and Forge Company, Cleveland, Ohio. Monel Metal attachment link type, also available.*

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET, NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



PONSOL* GOLDEN ORANGE 4G PASTE

(PATENTED)

A new du Pont vat dye especially suitable for materials, such as drapery fabrics, requiring extreme fastness to light and weather

PONSOL* Golden Orange 4G Paste (Patented), a new development in the range of du Pont Vat Dyestuffs, is a yellowish shade of orange possessing very good fastness to light, weather, chlorine, and washing. It is especially valuable for use on those materials requiring the highest degree of fastness to light and weather.

It is a "cold dyeing" type and is particularly useful as a shading color when used in combination with other vat colors of this class.

Being carefully controlled for physical properties, a maximum ease of application is insured.

Why not send for samples *today?*

*REG. U. S. PAT. OFF.

DU PONT DYESTUFFS
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E. I. DU PONT DE NEMOURS & CO., INC.
Organic Chemicals Dept.
Dyestuffs Division, Wilmington, Del.

They're describing a FINE FINISH!

WHEN Miss and Mrs. America "talk shop" about a new dress, what are they admiring? THE FINISH! They are praising the appearance—the colors—the feel—the drape—the texture.

Therein lies an object lesson for textile manufacturers who want increased sales. Give your fabrics a FINISH THAT SELLS. Give them more sales appeal . . . and you'll get more sales.

ONYX . . . for a fine finish!

The use of ONYX textile compounds for processing and finishing, is your assurance of beautiful, richly finished fabrics.

ONYX textile compounds are made by "*specialists on finishing materials.*" Each compound has the chemical properties that lead to a high quality finish.

Much of the fine fabric produced today, is processed and finished with ONYX compounds. Mills of the highest standing in the industry, entrust their finishing to ONYX compounds.

Learn what ONYX compounds can do to improve the finish on your goods. Write today for a trained representative to demonstrate, without obligation.

ONYX OIL & CHEMICAL CO.
Specialists on Finishing Materials.
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Onyx LABORATORY-CONTROLLED **PROCESSING & FINISHING COMPOUNDS**

"We're putting DAYTON COG-BELT DRIVES on all of our machines"

SAYS ARTHUR F. WEBER • GENERAL MANAGER OF THE TRI-PLEX SCREW COMPANY OF CLEVELAND

"These drives have effected many real savings in our plant," says Mr. Weber. "Power savings—economy of operation—saving of valuable floor space—lower maintenance costs. Previously we had to overhaul machines frequently and change bearings. These drives cushion the shock of starting and operating the machines—then, too, they permit greater flexibility of operations, which saves electric current. Because of these savings we are changing over all of our machines."

In factories of all kinds, in fact whenever power transmission is used, similar savings are effected when Dayton Cog-Belt Drives are installed. The reason for the amazing performance of Dayton Cog-Belt Drives is found in the scientific construction of the Dayton Cog-Belt itself. It is the only V-Belt specifically *"built-to-bend."* Its patented cog and laminated construction provides far greater flexibility... enables it to flex easily around even the smallest pulley without buckling or rippling.

And while it is more flexible, its laminated construction and patented reinforcement give it *extreme crosswise rigidity.* There's no squashing in the pulley groove . . . no distortion nor twisting. No other V-Belt combines such extreme flexibility with such positive crosswise rigidity.

But there are many more reasons why the Dayton Cog-Belt is setting new standards of performance in hundreds of industrial plants. Let us show you how it can save money for you in many ways—why Dayton Cog-Belt Drives are the most efficient drives in the world today. We'll gladly send you all the facts without cost or obligation. Write us today.

● *The only V-Belt that is specifically Built-to-Bend. See how the "cogs" take up the compression on the inner surface of the belt.*

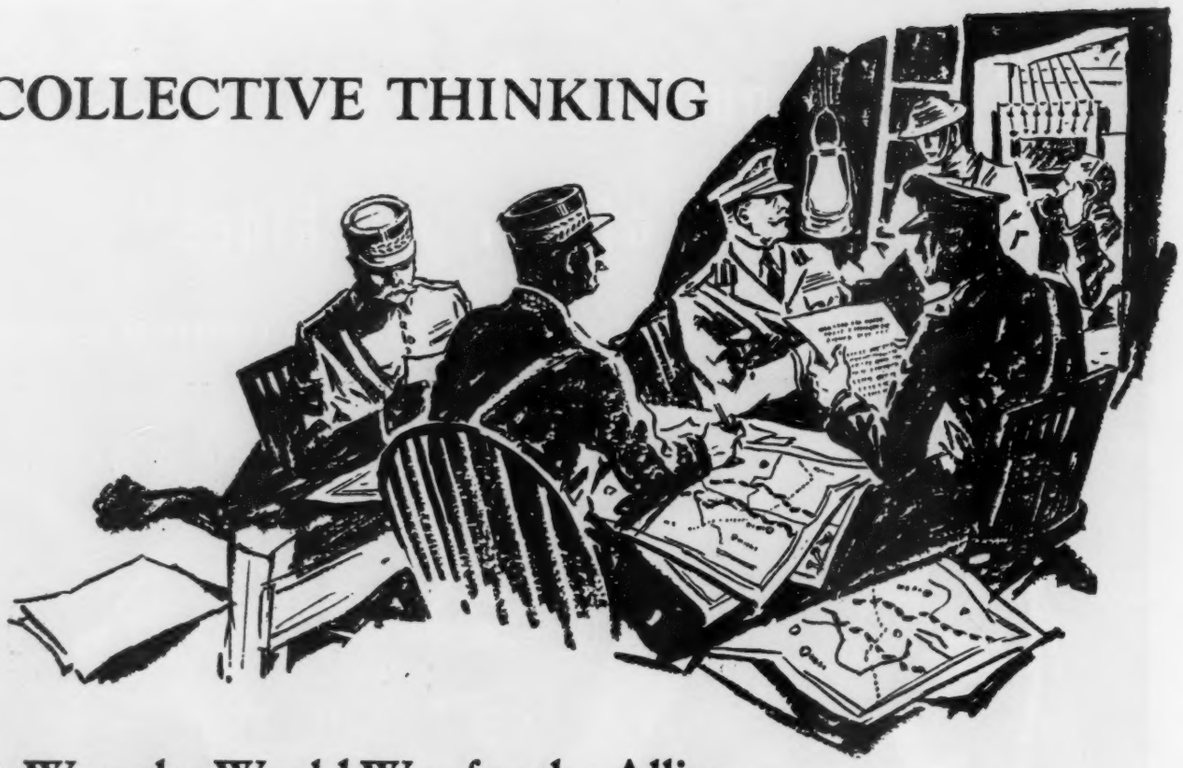
THE DAYTON RUBBER MFG. CO.
Dayton, Ohio

The World's Largest Mfr. of V-Belts . . . Manufacturers also of Dayton Fan Belts, Dayton Red Tube Radiator Hose and the famous Dayton Thorobred Tires and Tubes

Dayton
COG-BELT DRIVES

Cog-Belt Drives—F.H.P. V-Belt Drives—V-Flat Drives—Complete Drives, Pulleys and Belts in Stock. Fractional to 100 H.P.

COLLECTIVE THINKING



It Won the World War for the Allies.
It Can Win Industrial Battles for You.

Not until the Allies thought and acted collectively (rather than individually) under one directing head, did they achieve victory.

Collective thinking can also win *industrial* battles for *you,* such as chemical processing problems. Research in textile chemistry is now so prolific and styles change so quickly, that no one processing executive can adequately meet every new situation.

The size of the average chemical processing plant or department does not permit a *staff* of chemical specialists. This average plant or department must therefore utilize outside assistance.

A-H Consultation Service supplies this need with a staff of specially trained chemists assisted by a complete, modern laboratory and a company experience of 120 years. These chemists are glad to study your sizing, finishing or printing problems, free of charge, under the direction of your chemical processing executive.

Let collective thinking help you in checking up on routine methods as well as in meeting new situations.

CHEMICALS

Sizing and Finishing Gums and Compounds • Soluble Gums • Softeners • Soluble Oils • Tallow • Waxes • Soaps • Flour • Dextrines • Starches • Pigment Colors and Lakes • Ammonia • Acids • Blue Vitriol • Borax • Bichromate of Soda • Bichromate of Potash • Liquid Chlorine • Chloride of Lime • Caustic Soda (solid and flaked)

Arnold, Hoffman & Co., Inc.

Established 1815. Plant at Dighton, Mass.

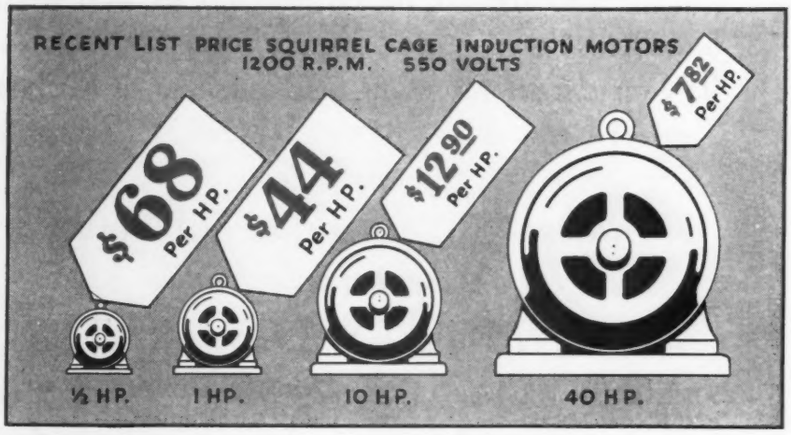
PROVIDENCE, R. I.

New York • Boston • Philadelphia • Charlotte

Every Plant Executive

should know these

4 FACTS ABOUT POWER COSTS



Earnings will be increased by the executive who knows and acts on these facts: **(1)** another source of profits can be tapped by effecting savings in power costs— **(2)** to figure your real power cost you must add to your monthly power bill every other item in the cost of power *delivered on the machine spindles*— **(3)** the major opportunity to reduce this power cost lies in correcting the application and use of power within your plant—and **(4)** the problem involves investment costs, carrying charges, maintenance and operating costs, loss of production and power waste.

The quickest and most economical way to reduce power costs is to rearrange and modernize your present equipment. The ultimate goal—minimum power cost—is never attained until *the right way to get the power to the work* is used throughout the plant.

For innumerable machine operations the right way to get the power to the work is Modern Group Drive (one *large* motor for a group of related machines). For those machines that can't be grouped, the right way is Unit Drive (individual *smaller* motors costing many times more per h. p.). Where you have related machines which should be grouped into manufacturing units, properly planned Modern Group Drive will save you real money. For example, machines designed for Modern Group Drive cost less than the same machines designed for Unit Drive.

Modern Group Drive requires less investment cost and carrying charges; it reduces operating and maintenance costs; it minimizes power waste; in short, it converts wasted power dollars into net profit. Our Red Book, free on request, tells why. Write for it today.

POWER TRANSMISSION COUNCIL
(SPONSORED BY MECHANICAL POWER ENGINEERING ASSOCIATES)

An association of producers and distributors of power, power units and mechanical equipment for the transmission of power

370 Lexington Avenue, New York

This advertisement also appears in Business Week and 3 other publications

MODERN GROUP DRIVE PTC

A POWER DOLLAR SAVED IS A PROFIT DOLLAR EARNED

The VANDERBILT Hotel

New York City

Visitors

always enjoy its Atmosphere of Friendliness and Charm and its Air of Distinction as well as its Excellent Cooking and Exceptional Service . . . . Its Convenient Location, its Nearness to Railway Terminals, Shopping District, Theatres, make it the

"Handiest" Stopping-place in New York

To these Attractions add

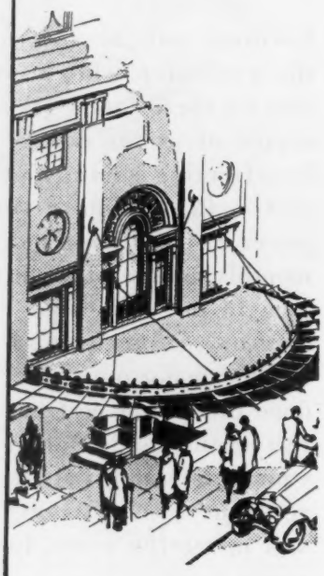
REMARKABLY LOW RATES

Single Room and Private Bath $3.00 Double Room with Two Beds and Private Bath $5.00

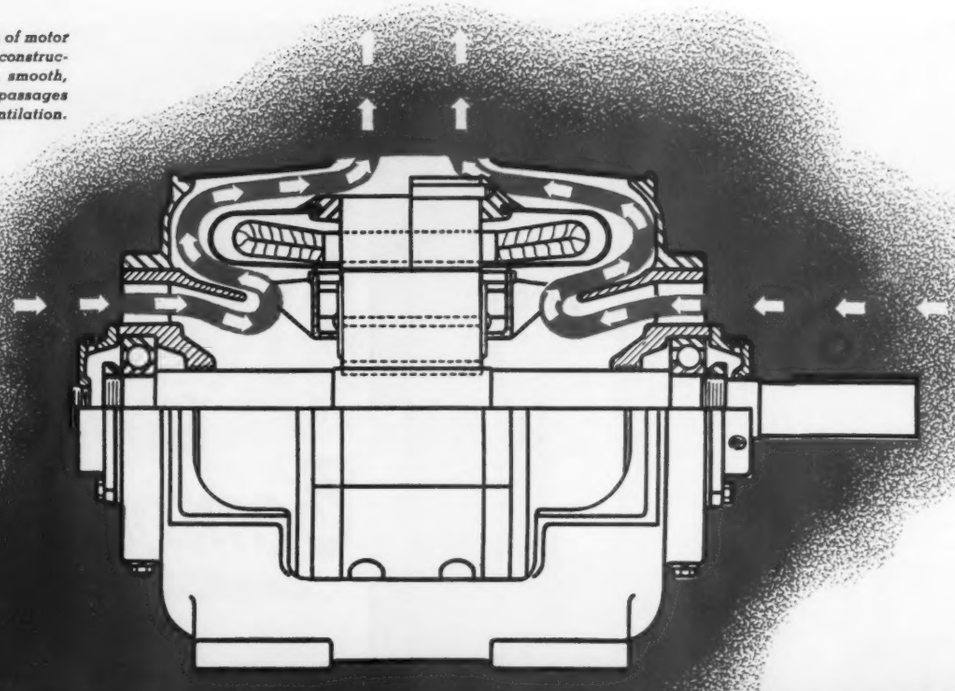
SPECIAL!
Breakfast, 75 cents; Luncheon, One Dollar; Dinner, $1.75

WALTON H. MARSHALL, *Manager*

Park Avenue at Thirty-fourth St., New York.



Cut-away section of motor showing internal construction. Note large, smooth, unrestricted air passages for thorough ventilation.



Lint and dust WILL NOT FOUL this motor

◆ That vexing problem of motors fouled by dust and lint is definitely solved by this new "quick-clean" motor especially designed for textile mills by Allis-Chalmers. ◆ Three features tell you the story ◆ all working parts positively dust-sealed ◆ all surfaces glass-smooth; lint and dust can not adhere ◆ roomy air passages; lint goes in and comes out again; thus overheating is eliminated ◆ What these advantages do to maintenance costs and motor life is startling; and exceedingly profitable. ◆ Four sizes —5, 7½, 10 and 15 H. P. for textile service. Standard N. E. M. A. mounting dimensions. ◆ Write for new bulletin No. 1172.

MOTORS

QUICK-CLEAN

ORIGINATED BY ALLIS-CHALMERS

ALLIS-CHALMERS MFG. CO. MILWAUKEE, WISCONSIN

Condor Compensated
PATENTED
TRADE MARK REGISTERED

BELTS

RUN AT LOW TENSION—

FASTENERS HOLD 3 TO 4 TIMES LONGER

The tendency for fasteners to work free or pull out is overcome to a very great degree in Condor Compensated Belts. The unique Compensated construction allows the ply stresses to equalize as the belt flexes around the pulley, making for definitely *longer* belt and fastener life.

Condor Compensated Belts are recommended for low-tension operation and may be installed on difficult drives where pulleys are small, and temporary overloads run up to 100 per cent.

A trial of Condor Compensated will convince you.

Sold by leading jobbers

NRA

Condor PRODUCTS

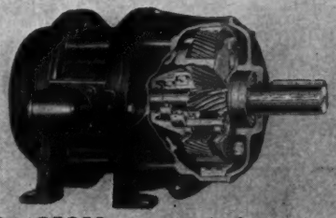
V-Belt	Fire Hose
Flat Belt	Steam Hose
Air Hose	Mill Sundries
Cone Belt	Suction Hose
Acid Hose	Oilless Bearings
Water Hose	Rubber Lined Tanks

Rubber Covered Rolls
Industrial Brake Blocks and Lining

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES and FACTORIES, 23 TOWNSEND ST., PASSAIC, N. J.

Tailor-made for finishing plants

WHICH MOTOR DO YOU NEED ?

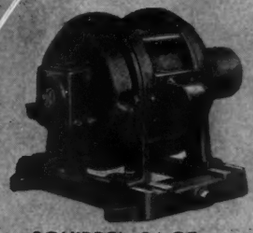


GEAR-MOTORS permit a wide choice of speeds from 600 down to 11 rpm. Available in single-phase, polyphase, and direct-current ratings, there is a G-E gear-motor for virtually every low-speed drive

DIRECT-CURRENT ADJUSTABLE- AND CONSTANT-SPEED MOTORS are available for a wide variety of heavy-duty applications

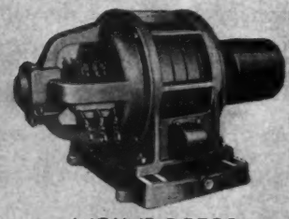
BTA BRUSH-SHIFTING MOTORS, manufactured exclusively by General Electric, offer wide ranges of speed and easy speed adjustment

TOTALLY ENCLOSED, FAN-COOLED MOTORS are recommended for use in severe moisture conditions. They are effectively cooled through the use of external-fan ventilation



SQUIRREL-CAGE INDUCTION MOTORS— simple, sturdy motors for your general-purpose applications

SPLASHPROOF MOTORS are designed for use where there are splashing or dripping liquids



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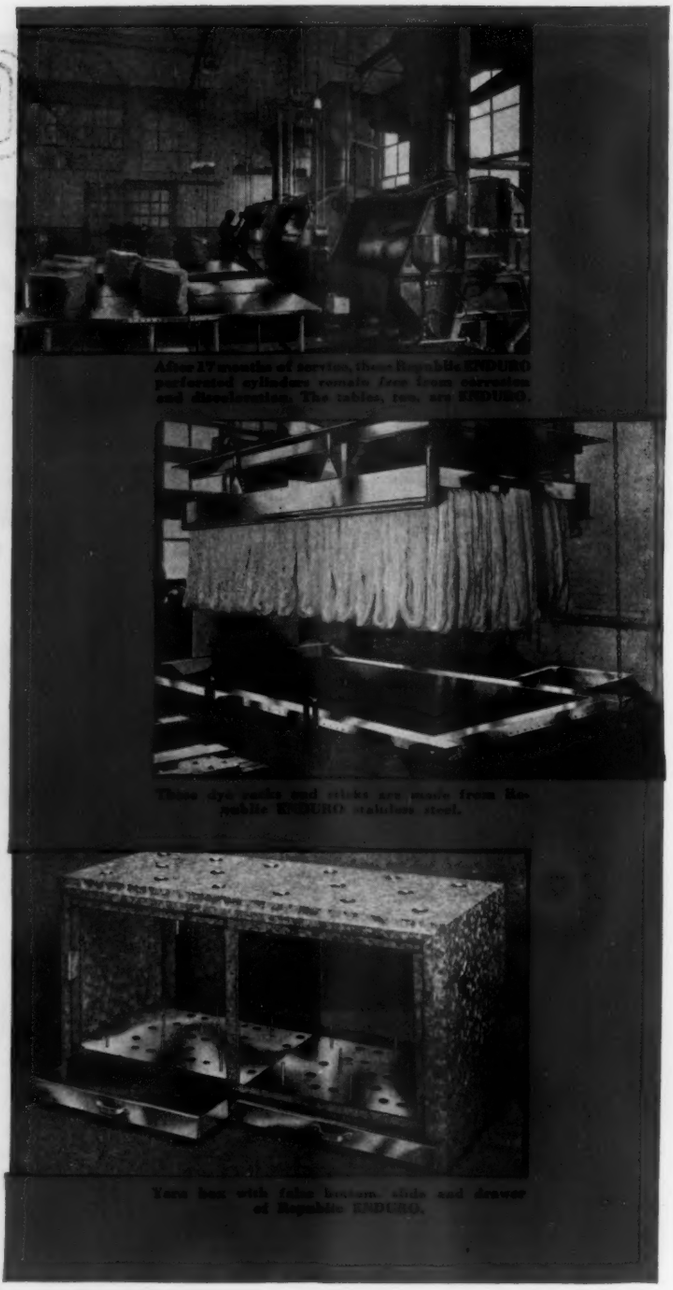

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COTTON

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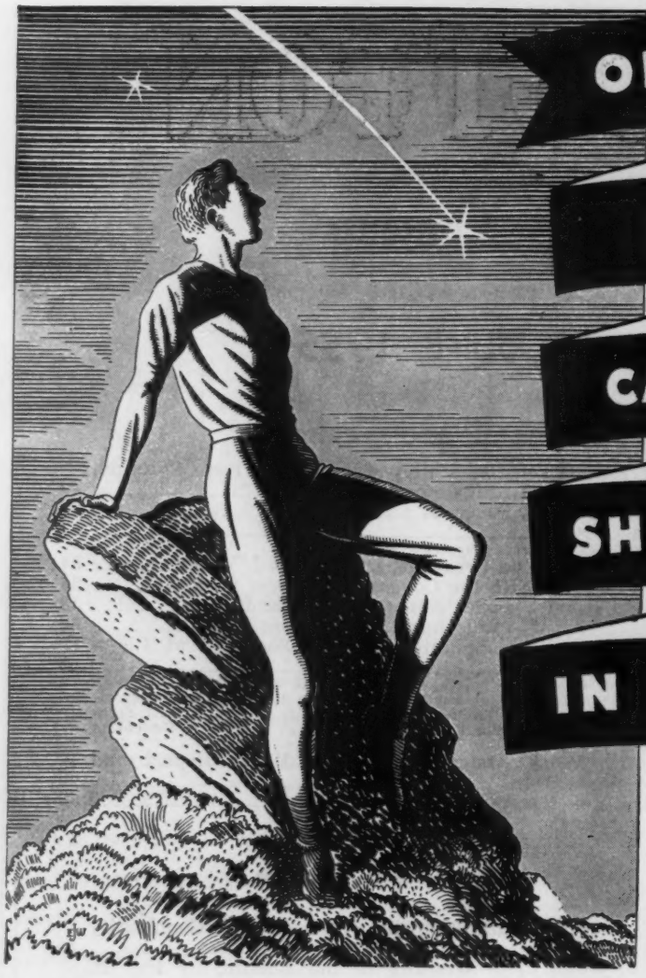

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SPUN·LO PREMIER DUL·TONE

JUN 21 1935

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No. 6

COTTON

June,
1935

An Anti-Friction Tension Pulley for Tape-Driven Spinning Frames

A thorough report of tests made on this new tape tension pulley, as to tension, spindle speed, labor saving and power economies effected . . .

By A. G. Singleton
Martha Mills, Thomaston, Ga.

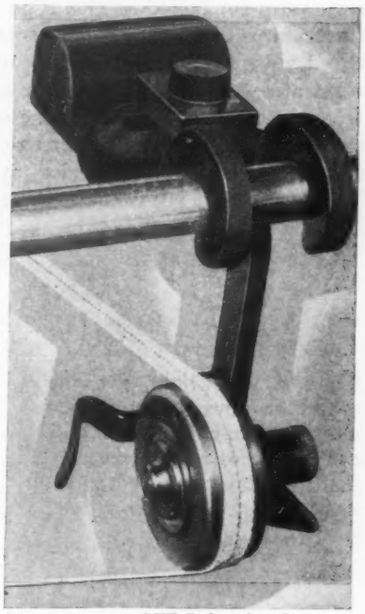
THE purpose of this article is to report a test made to ascertain the advantages of a newly developed anti-friction bearing pulley over the old type of tape tension pulley on spinning frames with wooden bearings now in common use. The favorable results obtained with anti-friction bearing pulleys in regard to power saving and smooth performance over a period of nearly one year have warranted the discussion.

The purpose of the tension pulley is to take up the slack of the tapes and develop at all times a tape tension of sufficient magnitude to maintain the highest relation between theoretical and actual spindle speed. From this it follows that this pulley is indirectly responsible for the speed of the four spindles which it serves and that therefore it is a very important part of the spinning frame because, for the production of quality yarn, it is of importance that the spindles run at a uniform speed. A good tension pulley should have the following prerequisites:

1. It should be as free running and as efficient as possible. The tension pulley is a part which is in the machine to make tape drives possible and actually it is not doing any productive work. All power required by this part is, therefore, power wasted.

2. It should remain free running and efficient at all times under operating conditions. Its construction should be such that the friction will not increase during operation either from internal or external causes. If this happens the pulley will drag. There will be more slippage between pulley and tape and the four spindles which this pulley serves will lose speed and we all know that if there is a wide variation of spindle speeds on a given spinning frame the quality of the yarn will suffer.

Tension pulleys now run on wooden bearings which have the advantage of needing no lubrication. However, we find that lint and dirt accumulate on the shafts between pulley and wooden bearing, and this accumulation consolidates into a very hard mass and acts as a brake. It slows down the pulley and more



A view of the anti-friction bearing tape tension pulley for spinning frames as described in this article . . . . .

Photo, courtesy SKF Industries, Inc.

slippage will occur between tape and pulley and driving cylinder. In this connection, it should be pointed out that tension pulleys exert a certain pressure on the tapes which in turn is transmitted to the spindle and cylinder bearings. This pressure is at present considerable and it causes increased wear on the spindle bolsters and cylinder bearings. But why? Do we actually need the tape tension used at present to drive four spindles? As a matter of fact, we don't. Much less tension would be sufficient to drive the spindles, but the additional weight is needed to prevent the tapes from slipping off of pulleys when they become choked with lint and while starting up the frames.

The comparative tests with anti-friction and wooden bearing tension pulleys included the following considerations:

1. How much power can be saved by using anti-friction bearing pulleys and to what extent can the

	Tests With Wooden Bearing Pulleys				Tests With Anti-Friction Bearing Pulleys			
Test Number	1	2	3	4	5	6	7	8
Date 1934	6/25	6/28	6/29	7/3	7/12	7/19	7/20	7/26
Duration of Test in Hours	6-0'	6-0'	5-50'	5-54'	5-48'	5-55'	5-50'	5-45'
Number of Hanks Run	5	5	5	5	5	5	5	5
Yarn Counts	22's	22's	22's	22's	22's	22's	22's	22's
Average Room Temp. in °F.	95	93	95	96	93	93.5	96.5	92
Cylinder Speed at End of Test in R.P.M.	1075	1070	1076	1075	1070	1070	1070	1070
Ave. Spindle Speed with Full Bobbins in R.P.M.	8750	8750	8690	8598	8800	8800	8750	8700
Pulley Tension in Pounds	3.03	2.34	1.79	1.45	3.03	2.5	1.83	1.5
Power Consumption in K.W.H.	30.5	28.5	26.5	26.0	28.0	27.0	25.5	24.0

Number of Spindles on Frame ---------- 240 — Package ---------- 7" Traverse Warp Wind
Ring Size ---------- 2" — Weight of Traveler ---------- No. 5—6½ Grs.

Table I—Power Test Data and Results

tape tension on such pulleys be reduced without increasing slippage?

2. In what condition will the pulleys be after a comparatively long running period?

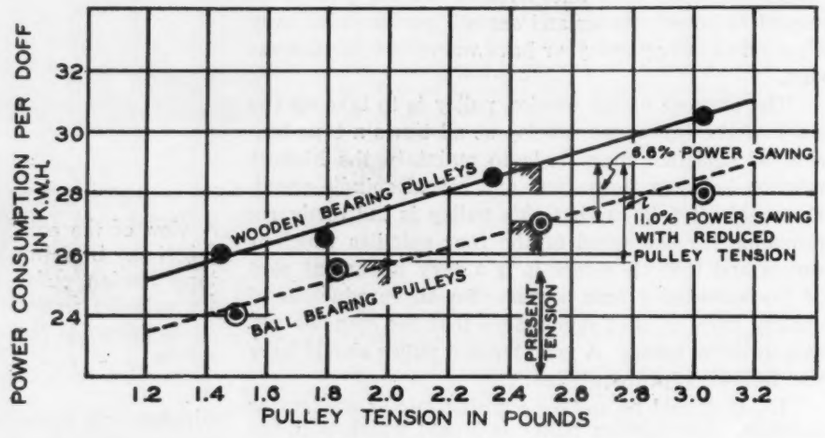
Method of Conducting Tests

To obtain a true comparison of the pulleys all the tests were conducted on the same spinning frame. A frame near the center of the spinning room was selected with a view of having as near as possible constant atmospheric conditions for all the tests. Also a frame was selected on which the condition of the tension pulley bearings in relation to cleanliness could be considered as average under operating conditions. The tapes were adjusted to the same length so that the pulley tension would be the same on all the tapes. All tests were made with the spindle bases filled to the same oil level and no oil was inserted during the run of a test.

The power input to the motor driving the spinning frame was measured with a General Electric Type D-14 watthour meter. Also, for checking purposes an Esterline-Angus graphic watt meter was connected in series with the watthour meter. All tests were run for the length of one doff and care was taken that the same number of hanks per doff was spun.

The cylinder speed was obtained by means of a Hasler tachometer and the spindle speeds by means of a stroboscope. Since the maximum tape slippage occurs when the spinning load is a maximum all speed

Fig. 1, shown at right, gives the report on Power Consumption as a Function of Pulley Tension; and compares power consumption per doff between wooden bearing and ball bearing pulleys . . . . . .



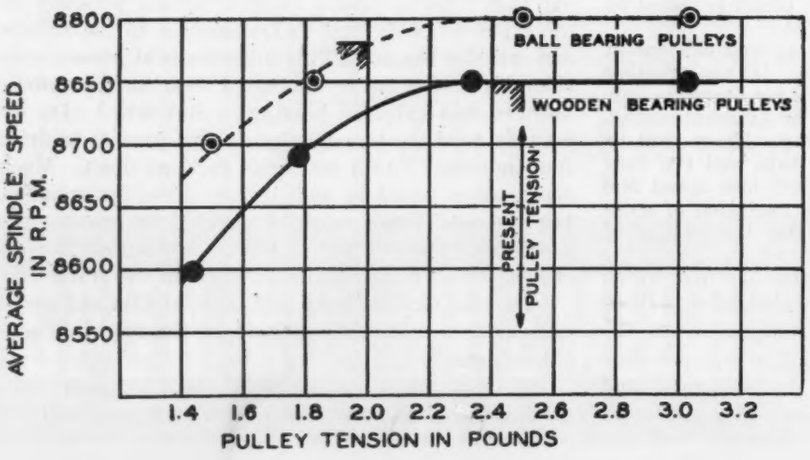
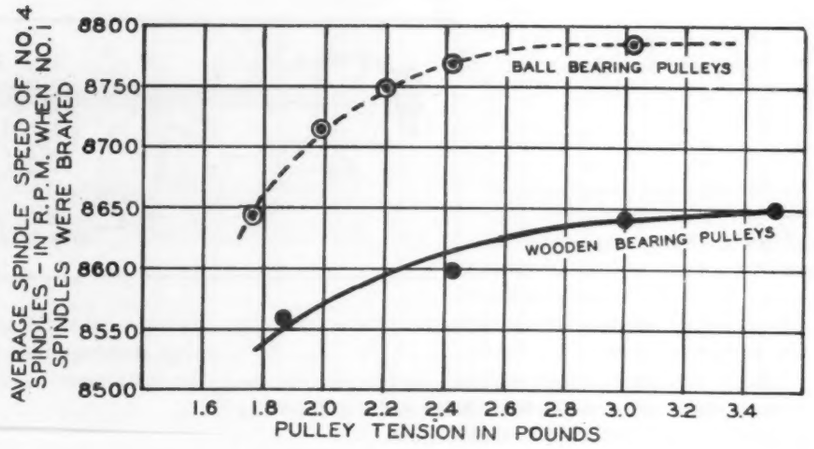


Fig. 2, shown at left, gives the report on Spindle Speed as a Function of Pulley Tension; and compares the spindle speeds produced with wooden bearing and ball bearing pulleys . . .

Fig. 3, at right, gives a comparison of tape slippage with wooden and ball bearing pulleys. Maximum slippage occurred on No. 4 spindle with No. 1 spindle braked (See Fig. 4) . . . . . .



ERRATUM

In Fig. 4, page 51, the numbers designating spindle No. 3 and Spindle No. 4 are transposed. The spindle shown as No. 3 in the sketch should be No. 4, and the one marked No. 4 should be No. 3.

ing to the pulley bracket a lever arm with an adjustable weight. The effective tension was measured by means of a small pair of spring scales.

A series of power tests were made on the wooden bearing pulleys with different pulley tensions. Then they were removed from the frame and anti-friction bearing pulleys were installed. After these pulleys had been in operation for several weeks power tests were made in the same manner as with wooden bearing pulleys.

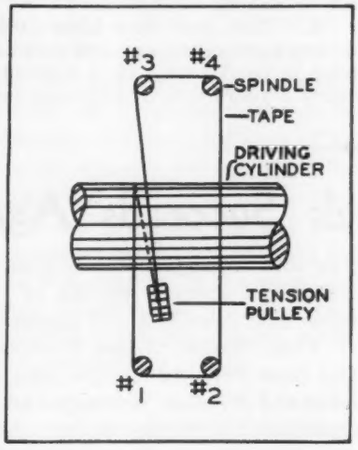


Fig. 4

Results of Tests

The test results are tabulated in Table I. They show that a total power saving of 11.0 per cent can be effected by the use of anti-friction bearing tension pulleys. Part of the power saving is due to the anti-friction property of the pulley and the rest is due to the fact that with these pulleys less tension can be used without getting excessive slippage.

The power readings obtained with the different type pulleys are plotted in Fig. 1 as a function of the pulley tensions. The spinning frames have a pulley tension of 2.5 pounds at present and it will be noted from the power curves that at this tension there is a power saving with ball bearing pulleys of 6.6 per cent. This saving is due to the anti-friction properties of the pulleys. Now, in Fig. 2 the spindle speeds obtained with the different type pulleys in conjunction with the power tests are plotted as a function of the pulley tensions. It will be noted that with ball bearing pulleys the tension can be reduced to 2.0 pounds without getting any higher slippage than that with wooden bearing pulleys with a standard pulley tension of 2.5 pounds. Therefore, if we reduce the pulley tension to 2.0 pounds with ball bearing pulleys we obtain an additional power saving of 4.4 per cent, effecting a total power saving of 11.0 per cent.

The pulleys have been in operation for a period of nearly one year and we find from observations and these tests that the pulley tension can safely be reduced to 2 pounds without getting excessive slippage or having trouble with the tapes slipping off while starting the frames. This is due to the fact that the pulleys are free running and remain so at all times. The construction of the pulley is such as to prevent the accumulation of lint and dirt. This guarantees uniformity of friction and thus uniform slippage throughout the life of the pulley.

Further comparative tape slippage tests were made with the pulleys by means of holding one of the spindles in a driven group of four and measuring the spindle speeds of the others. A wider speed range is obtained in this way and more accurate results can be obtained with the stroboscope. It was found by experiment that the maximum tape slippage occurred on Spindle No. 4 when Spindle No. 1 was braked. See Fig. 4. Tests were made with both wooden and ball bearing pulleys with different pulley tensions and in each case the No. 1 spindles were braked and the No. 4 spindles speeds measured. The average of the spindle speed readings obtained in this manner with a given pulley tension are tabulated in Table II.

Table II—Summary of Tape Slippage Test Data

	With Wooden Bearing Pulleys				With Anti-Friction Bearing Pulleys			
Pulley Tension in Lbs.	3.5	3.0	2.43	1.87	3.03	2.42	2.2	1.99	1.77
Average Spindle Speed of Spindles No. 4 When Spindles No. 1 Were Braked (See Sketch in Fig. 4)	8,650	8,643	8,600	8,560	8,790	8,770	8,748	8,715	8,644

In Fig. 3 the spindle speeds in Table II are plotted as a function of the pulley tension. These curves show that there is considerably more tape slippage with wooden bearing pulleys than with ball bearing pulleys.

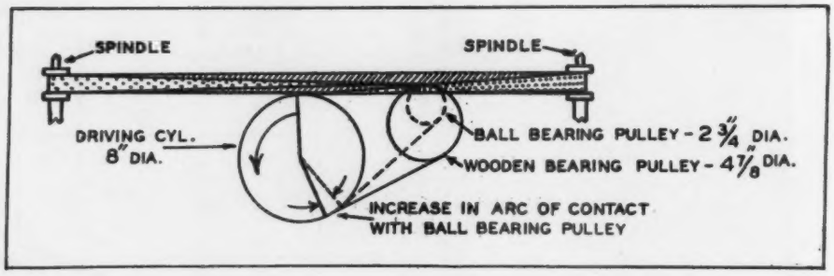

SPINDLE
SPINDLE
DRIVING CYL. 8" DIA.
BALL BEARING PULLEY - 2 3/4" DIA.
WOODEN BEARING PULLEY - 4 1/8" DIA.
INCREASE IN ARC OF CONTACT WITH BALL BEARING PULLEY

Fig. 5, illustrating the greater arc of contact secured by use of the ball bearing tape tension pulley . . . . . .

The great difference in tape slippage is believed to be due to two reasons:

First, the small effort required on the part of the tape to drive the anti-friction pulley reduces the drag on the tape at this point to a minimum.

Secondly, the ball bearing pulleys are of much smaller diameter which insures a greater arc of contact between the tapes and driving cylinder and, therefore, less slippage. (See Fig. 5.) Unfortunately, plain bearing tension pulleys cannot be made of smaller diameter as the increased speed would wear out the wooden bearings and pulley shafts too quickly. Then again, the larger diameter is needed with plain bearing pulleys to overcome the excessive friction and to keep the tapes from slipping off.

The following conclusions may be drawn as applying to anti-friction bearing tension pulleys on spinning frames under the conditions in our mill in which the tests were conducted:

Conclusions

1. That the tape tension on anti-friction pulleys can safely be reduced to 2 pounds without getting excessive tape slippage, thus effecting together with the anti-friction properties of the pulleys a power saving of 11.0 per cent.
2. That no tapes fall off when the frames are started.
3. That more uniform spindle speeds are maintained due to the constant friction of the pulleys under operating conditions.
4. That there is a labor saving since the pulleys do not accumulate lint and dirt and, therefore, do not have to be cleaned. It is claimed that one lubrication every 5 years will be sufficient for the pulleys.

National Cotton Week Succeeds Again

ANOTHER May brought another National Cotton Week, held this year from May 6 to May 11 inclusive, and all reports indicated that it joined its predecessors as a successful merchandising and promotion event.

Sponsored by the Cotton-Textile Institute, through its New Uses Section, National Cotton Week represents a tremendous nation-wide activity to promote further the sale and distribution of cotton fabrics and cotton goods. This year, nearly 40,000 merchants in every large city in the country, and thousands in smaller communities, participated in the affair. Cooperating with them were the national and local organizations of the so-called "maintenance" industries including commercial laundries, and manufacturers of soaps, washing machines and sewing machines, as well as dealers in a wide variety of household appliances and services.

It was estimated that more than $2,000,000 was spent during National Cotton Week in newspaper, radio and motion picture advertising. The New Uses Section of the Institute furnished literally tons of promotional material including posters, banners, merchandising helps, contest suggestions and celebration plans to stores, newspapers, radio stations and chambers of commerce throughout the country.

Scores of community-wide Cotton Week celebrations, such as the spectacular Cotton Carnival and first Annual National Cotton Show at Memphis, Tennessee, and the Arkansas Cotton Festival at Little Rock, Arkansas, served to heighten the national interest in cottons and to center attention on the universal style, utility and economy appeals of cotton for almost innumerable household and apparel uses.

From Boston to San Francisco and Los Angeles, and from Portland, Oregon, and Chicago, to New Orleans and Houston, newspaper advertising and leading department store executives reported to the Institute that all past records for Naional Cotton Week were surpassed by this year's success.

Five thousand negro voices chanting spirituals and a historical pageant with a cast of more than 1,000 persons portraying "History of Cotton in Arkansas" featured the celebration at Little Rock. It opened with a Cotton Ball on Thursday night, May 9, presided over by a King and Queen Cotton, and cotton evening gowns for the women, cotton suits for the men, and appropriate cotton accessories for both, emphasizing the new beauty and fashion possibilities of cotton, were the order for the ball. On the following day, "Cotton Through the Ages", a historical parade, included numerous floats entered by nationally known manufacturers to show the major role played by cotton in modern industry. Friday night the festival reached its climax in the pageant showing the history of cotton.

Another striking celebration of cotton week was the extensive program executed at Memphis. Many another community, in and out of the cotton growing belt, fittingly celebrated the occasion in varying degree. Sewing contests, railroad diner menus printed on cotton cloth, etc., were among the novel forms utilized to stress cotton throughout the week.

The purpose of this department is to pick up ideas from this mill and that, and deposit them here for you and others in pithy paragraphs. If you haven't already told us whether you like it or not, please do so now. The Scavenger Roll will welcome also suggested topics and paragraphs from readers. Let us hear from you . . . . . .

We HAVE Made Progress

Technical considerations aside, our predominant feeling as we left the recent Greenville Exposition was regret that Arthur Brisbane had not attended. We use Brisbane specifically because we have read frequently in his column criticism of the textile industry for its lethargy in adopting modern production methods, automatic machinery, etc. Cited by way of contrast have been the automobile and other industries which have within the last few years adopted mass-production practices. We use Brisbane, again, to illustrate the attitude toward the textile industry of an indefinite number of people who are not familiar with the amount of research work continually being done in matters textile, with the progress that has been made in automatic machinery development within recent years, and, just as important, with the mass-production stage the textile industry had reached a generation or more ago before many other modern mass-production industries were born.

We are not going into an enumeration and description of research effort and machinery developments with which we are familiar, for the few who read this page no doubt have as broad or broader knowledge of such matters than the writer. We realize, too, that those readers will not be the critics we would like to impress with the textile industry's progress compared with that of other industries, and that all we are accomplishing is getting this matter off our chest and having the satisfaction of speaking a word in behalf of the industry to which our life is devoted.

We do want to stress the point that many, many years ago, textile manufacture became a mass-production, automatic machinery affair. The cotton picker or lapper, the card, and the spinning frame, are so old in principle and performance that they are likely to be considered archaic, inefficient, obsolete, etc., by those who do not appreciate the complicated, delicate work they do. The operations of cleaning, carding, drafting and twisting cotton fibers are such everyday, commonplace affairs with us that the originators of the principles governing the conversion of infinitesimally fine, short fibers into usable, serviceable materials are rarely accorded today the credit due them.

Let us remind those who have forgotten that a few years ago a successful automobile manufacturer, perhaps America's most striking example of industrial success via mass-production methods, took a "flyer" in cottotn textile manufacture with a view to making short-cuts, processing improvements, drastic reduction in manual labor, etc. We don't know what happened to his experiments, only we know we have never seen a "Ford" card or spinning frame at this writing. There have probably been periods of lethargy in the mechanical advancement of the textile industry, yes; we admit that readily. But give the industry its due and realize many of the so-called modernized-production industries are just now catching up with textiles.

Systematic Maintenance

We have just read again "Overhauling as an Important Part of the Maintenance Program" (*), by Fred M. Mitchell, in the February 1934 issue of COTTON. We have been forcibly struck by the thought which we would express briefly as Systematic Maintenance of Machinery. The thought we have in mind is that the practice in many mills of having machinery thoroughly overhauled once or twice a year and giving it only indifferent, shall we say, "slipshod" attention between times is a poor system—if a system at all. We grind and set cards before the wire becomes dulled; on that one machine mills generally have a systematic program. But on other machines in the plant, little maintenance work is done unless something radically wrong develops. For instance, a spinner "flags" an end that won't run and a section man replaces a roll, sets a guide, plumbs a spindle, replaces a ring, or does whatever is necessary to get the end running again. But for how many days before that end reached the "distress" stage had that unit been producing inferior yarn?

The matter has taken only nebulous form in our mind to date, but we believe a thorough systematic check of, say, a frame per day per section man, and a report made for the overseer's file, is the way to handle this work. We have in mind listing on the report form the points that should be checked and having space for listing major repairs, and equipment needed by that frame. A friend recently advised some mills have such a system and report forms; we hope we may hear from them through COTTON. We doubt if there is a greater medium for service to the textile industry than these columns, and we hope we may be favored with seeing in print here the systems followed and the forms used.

(*) Reprints of this article as published in the February 1934 issue, giving a description of a suggested program of maintenance, the points to be watched, etc., are available upon request.—THE EDITOR.

Studies in Spinning End Breakage

By Thomas J. Willis

THREE practical methods are given for making tests on spinning end breakage. All are good, depending on how detailed you wish to make your study. The accompanying complete form used by the author in recording end breakage tests will be particularly interesting to those desiring to devise a record of this kind . . . . . .

EXCESSIVE end breakage in spinning is costly. It not only increases the cost of production but also lowers the morale of the employees. The purpose of this article is to present three methods of studying end breakage in the spinning room. These studies enable the checker to determine with some degree of accuracy *why* and *where* end breakage is high. If spinning is running bad, try the following methods of locating the trouble and its causes. Analyses of the data thus obtained, and an intelligent application of such knowledge toward remedying it, should result in a material reduction in end breakage. That these methods are practical is evidenced by the fact that by their use the mill has reduced end breakage from 170 to 40 ends down per 1,000 spindle hours.

Method No. 1.—Preliminary to making check studies by Method No. 1, the checker should (1) push back guide wires on all ends down on the set of frames being checked, and (2) instruct the spinner to put up no ends unless the guide wire is pushed back. This procedure enables the checker to inspect each end down without interfering with the work of the spinner and also provides against the spinner putting up ends which have not been checked.

Table I presents the type of record to be kept by the checker, who, of course, must be thoroughly familiar with a spinning frame. Such a record, carefully filled out, provides the data necessary for an intelligent analysis of the difficulty. The checker makes a close inspection of each end down, classifies it as to cause and records it as in Table I. It is suggested that the check be made over a three-hour period for from 10 to 15 days. No conclusions may be based on any one check, but an average based on 10 to 15 checks should serve as a reliable guide in locating the weak spots in the spinning.

Table I presents in itself an end breakage study on 40s filling yarn. At a glance one sees that the highest number of ends down—with the exception of Item 2—are found under Items No. 9, 23, 25, 27 and 37. It is interesting to note that in these cases the mechanical condition of the frame is at fault. It is not a difficult matter for an experienced man to make the necessary mechanical adjustments and to reduce greatly the breakage under these five items.

Let us next consider Items 1, 2 and 3, "Unclassified,—top, middle and bottom. Under "Unclassified—top" are recorded the ends which come down at the top of the traverse (filling wind) or apex of the build on the bobbin. "Unclassified—middle" includes ends down from ¼-inch of apex to ¼-inch of bottom of build or stroke. "Unclassified—bottom" includes all ends that come down on ¼-inch from bottom change of the ring rail. It is generally assumed that more ends come down when the yarn is winding on the smallest part of the bobbin or apex, since this is the point of greatest tension on the yarn. The checks made did not support this assumption, since a far greater number of ends down were recorded under Item 2, "Unclassified—middle" than under Item 1. The checks indicated that the number of ends down under "Unclassified—middle" depended to a considerable extent upon the traveler used. The use of the proper traveler reduced the end breakage under Item 2 appreciably.

Method No. 2.—This method may be used alone or may be combined with the first method.

Preliminary to making an end breakage study by Method No. 2, the checker instructs the spinner not to put up ends unless the guide wires are turned back. Then as the ends come down, the checker goes to these ends, turns the guide wires back and puts a chalk mark on the creel directly over the end that is down. In checking a set of frames in this manner for three hours, it will be found that some few of the ends are causing most of the trouble. In some cases a given end came down six times during the three-hour period. This method of checking locates the particular spindles causing the trouble. It is evident from the following calculations that each end in the spinning room does not come down even one time each day; therefore, the spinner should be greatly concerned with the spindle that has two ends down in an 8-hour run.

Spinner runs 10 sides of 128 spindles = 1,280 spindles.

Time run is 8 hours = $8 \times 1{,}280 = 10{,}240$ spindle hours.

$$\frac{1280 \text{ ends down} \times 1{,}000}{10{,}240} = 125 \text{ ends down per 1000 spindle hours.}$$

The chalk marks on the frame not only show which ends are coming down most often, but also show that some sides have as high as 99.0 ends down per 1,000 spindle hours while others show only 26.0 ends down per 1,000 spindle hours, with an average of 53.3 ends down per 1,000 spindle hours. These marks on the creel show the section man the exact spindles to work on and the sides that need adjustment.

Method No. 3.—This method serves as a quick, easy check on the entire spinning department. This method is so simple that each overseer or second hand should make this check at least twice a week in order that he may know how his spinning is running.

Preliminary to this check the checker should instruct the spinning frame operator to take a 5-minute rest period. The checker then turns the guide wire back on each end he finds down. At the end of 5 minutes the checker counts the number of ends which have come down since the guide wires were turned back. For future reference he records the number of ends down on each frame.

To determine the actual running conditions, calculate as follows, substituting data obtained in check:

No. of ends down in five minutes = 4
No. of sides run = 10
No. of spindes per side = 128
Total spindles = 10 × 128 = 1,280 spindles
5 min. ÷ 60 min. per hour = .0833 hours run
.0833 hours run × 1,280 spindles = 106.6 spindle hours.

$$\frac{4 \text{ ends down in 5 min.} \times 1{,}000}{106.6 \text{ spindle hrs.}} = 37.5 \text{ ends down per 1,000 spindle hours.}$$

To summarize: These are simple and effective methods of determining why end breakage is excessive and where it is occurring most often. Any intelligent, careful operative thoroughly familiar with a spinning frame may apply these methods as outlined. The data thus obtained will guide the overseer of the spinning room in materially reducing end breakage.

◆ ◆ ◆ ◆

At right, TABLE I, showing a complete form for making and recording an end breakage test on spinning . . .

Blank Company	City, State
Date 4/5/34	Actual no. 40.2T
Hour started 7:55 a. m.	Draft 14.5
Hour stopped 10:55 a. m.	R.P.M. front roll 108
Hours run 3	Traveler no. & style 13/0-½ c
No. spindles 1280	Steel roll setting
Spindle hours 3840	Middle roll weighted or unweighted
Breaks 207	Staple cotton 1" 2d.
Ends down/1000 spdle. hrs. 53.8	R.P.M. spindle 8480
Frame Nos.& type 53, 54, 55, 56, 57 F+J.	Twist mult.___ Twist gear___
Yarn no. 40s F.	Cap bar setting
Checker sign here ___	

	Causes	No. Breaks	Caused by other spindles	Total no. breaks	Per cent of breakage
1	Unclassified - top	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 IIII		14	6.76
2	Unclassified - middle	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸		55	26.57
3	Unclassified - bottom	𝍸 I		6	2.90
4	Band slack	I		1	.48
5	Band off	IIII		4	1.93
6	Bobbin riding high				
7	Broken by operator	II		2	.96
8	Broken in cleaning	𝍸		5	2.42
9	Bad piece up	𝍸 𝍸 II		12	5.80
10	Bad skewer				
11	Cotton stops skewer	III		3	1.45
12	Doubles				
13	Ends whipping				
14	Flying lint	IIII		4	1.93
15	Guide wire	I		1	.48
16	Hard end	II		2	.97
17	Lint in trumpet	III		3	1.45
18	Roving outside roll				
19	Roving outside guide	I		1	.48
20	Ring worn	II		2	.96
21	Roving uneven				
22	Roving run out	𝍸		5	2.42
23	Roving broken back	𝍸 𝍸 II		12	5.80
24	Steel roll lap	II		2	.97
25	Steel roll flutes worn	𝍸 𝍸 III		13	6.28
26	Steel roll flutes burred				
27	Steel roll crooked	𝍸 𝍸 𝍸 𝍸 𝍸		25	12.08
28	Separators				
29	Spindle out of plumb	I		1	.48
30	Singling	III		3	1.45
31	Top clearer waste	II		2	.97
32	Traveler worn				
33	Traveler off				
34	Traveler cleaner				
35	Traveler lint on	IIII		4	1.93
36	Thin places roving				
37	Top roll bad	𝍸 𝍸 𝍸 𝍸 𝍸		25	12.08
				207	Total ends down

Humidity Readings				REMARKS:--Below taken from chalk marks on frame
Time	W.B.	D.B.	% R.H.	
7:55	69	80½	55	Frame #53 - 19 ends down R.H. side 20 ends down L.H.
				" #54 - 26 " " " " 17 " " "
	70	85	47	" #55 - 24 " " " " 29 " " "
8:30	70	82	54.5	" #56 - 38 " " " " 12 " " "
	69	81	54	" #57 - 12 " " " " 10 " " "

On Inspection Tour with the Comers

By Robert W. Philip

EVIDENCE of how the employees of one extensive southern textile mill organization are, through the foresight of the company's management and under its leadership, building within themselves good citizenship and character was revealed to the guests of the Avondale Mills and its affiliate, Cowikee Mills, on the annual inspection tour of their plants, during the week of May 6.

For a number of years it has been the custom for the officials of these mills to devote a week to the visiting and inspecting of their several properties over the state of Alabama, inviting some friends and customers to spend part or all of the week with them.

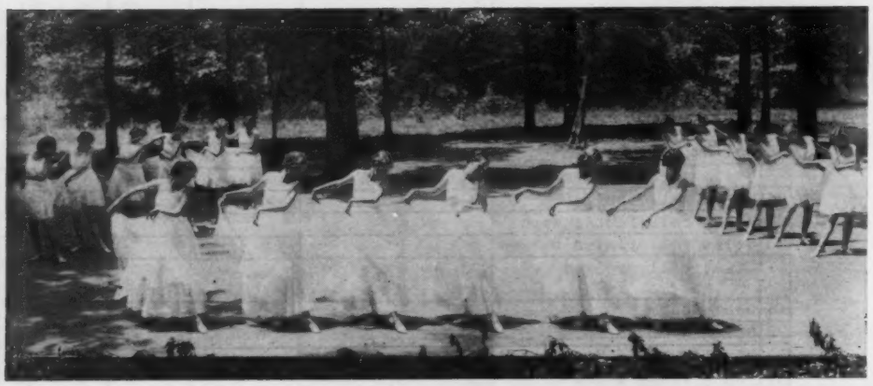
The tour this year started on Monday, in Birmingham, with the party as the guests of Mr. and Mrs. Donald Comer at a dinner at the Mountain Brook Club, which followed an inspection of the company's plant there and a show staged by the kindergarten and mill school. Tuesday morning the party, numbering about 75, were guests at breakfast of Mr. and Mrs. Tom Rennie, at the Pell City plant. During the breakfast hour, music was furnished by the mill band. After breakfast, came an inspection of the village and mill grounds, and then a one-act operetta, "The Brownie Band", presented by pupils of the mill school, which was followed by an inspection of the plant.

Luncheon Tuesday was served at the company's property at Sycamore, with Superintendent and Mrs. O. H. Dunn as hosts. A program by kindergarten and school children followed luncheon, then came an inspection of the company's gin and cotton mill, and the extensive farm which is operated by the company under the supervision of G. S. Smelley.

Dinner Tuesday was at Sylacauga, where the largest properties of Avondale Mills are located. The program here started with a banquet in the auditorium of the Sylacauga Agricultural High School, given by the Exchange and Rotary Clubs of the city. Bibb Graves, governor of Alabama, made a short address, being followed by George A. Sloan, chairman of the Cotton Textile Code Authority, who was a member of the inspection party.

Following the banquet, an elaborate outdoor pageant, "The Passing of the Kings", was presented with more than three hundred Avondale Mills employees, and school children, participating.

Wednesday, at Sylacauga, the morning was spent in inspecting the five mills of the company there, with lunch at the home of Mr. and Mrs. Hugh M. Comer. In the afternoon, the visitors witnessed an inspiring sight in a parade of more than 1,400 school children of the mills' schools, and a dramatic and impressive fashion show of dresses and costumes designed and made by the girls of the home economics classes of the schools of the mills at Sylacauga. The Drummond Fraser Hospital, operated by Avondale Mills, was next inspected. The medical department at the mills in Sylacauga was started in 1914 with one part-time doctor. In 1917, the hospital was erected to take care of maternity cases and render first aid. At present it has an A grade rating by the American College of Surgeons, conducts a nurses training school with full time instruction, has two dentists, eight graduate nurses, one full time and four part-time physicians, all working in a modern plant.



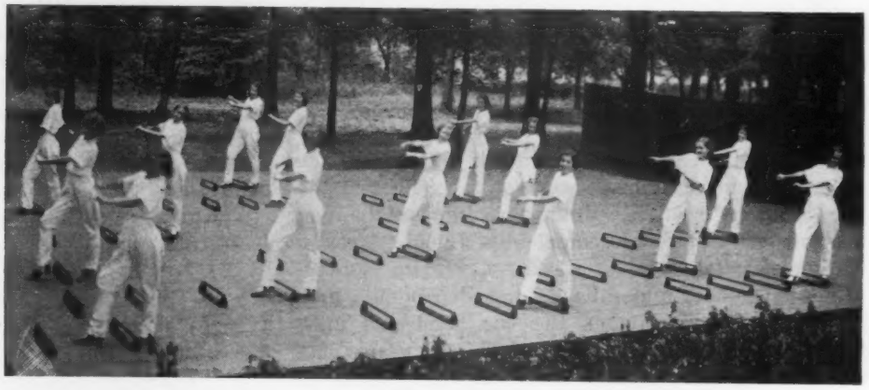
The extensive dairy and poultry farm and other outside activities at Sylacauga were then inspected, and the day was concluded with a dinner served at Beverly Hall by the home economics class of the high school, and a brief entertainment by the glee club, harmonica club, tumbling club and other participants.

Thursday morning, the party went to Alexander City, where the Bevelle plant of Avondale Mills is

THESE photographs show some of the scenes from the historical pageant at Sylacauga, and other entertainment staged by employees and their children for the inspection tour.

Above, a ballet dance at Sylacauga; at right, another scene from the pageant . .

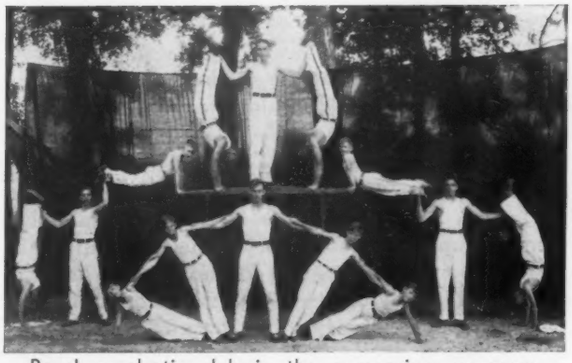
Left, another scene from the Sylacauga pageant, in which more than 300 Avondale mill employees and their children participated. Below, the jockey dance, by school children, staged at Sylacauga on Wednesday night . . . . . .



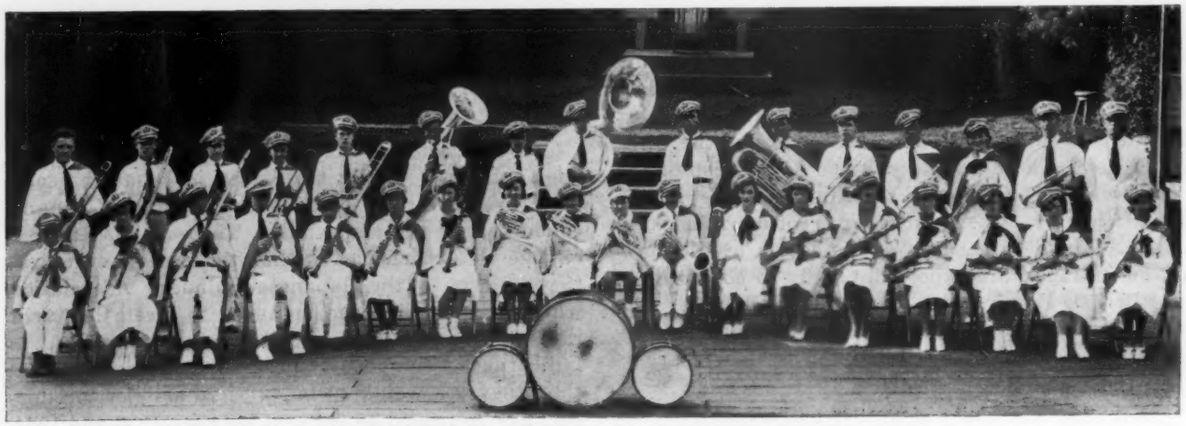
located, where the program began with a kindergarten entertainment and a visit through the village and mill, with lunch at the Rusco Hotel. In the afternoon, the visitors attended a baseball game between Bevelle and Sycamore, and later enjoyed a fish supper and a play staged by the Bevelle School.

Friday began with a visit to LaFayette, and the Avondale mill there, and to Union Springs, to the Cowikee Mills, where there was a kindergarten program, a barbecue, and inspection of the mill. After lunch the party motored to Eufaula, to the other plants of the Cowikee Mills, and the poultry farm, and a banquet and pageant in the Cowikee Mills Community Park.

It would be well-nigh impossible, within space limitations, to transmit to paper the thrill, enthusiasm and inspiration gained from attending one of these Avondale mill inspection tours. The accompanying photographs of some of the activities which entertained the visitors may convey some conception of the magnitude, scope and possibilities of the work being done by the people of these communities in self-development and self-expression.



Boys' acrobatic club in the gymnasium program, showing one of the group of pyramids . . . .



The Cowikee Mills band, which played for the inspection tour party during a banquet on the Cowikee community grounds . . . . . .

A Brief First-Hand View of JAPANESE MILL CONDITIONS

WITH so much being said now-adays about Japanese textile mills, we believe textile readers in America will be especially interested in the accompanying brief description of some phases of the Japanese textile industry. It was prepared by a qualified observer who recently spent some time in that country, whose impressions it reflects, and who has kindly made these notes available for our readers.—THE EDITOR.

THE development of industry in Japan and the rapid increase of its competitive power in the world markets is well known. Industrial Japan must export to live. Economically, Japan's circumstances parallel those of Germany. Japan is overpopulated, under-mineralized, and dependent upon foreign raw materials on the one hand and upon foreign markets on the other. This condition has made necessary and possible a steady growth in exports, particularly of cotton textiles, and it is the cotton goods business that has focused world attention on Japan.

There is no doubt that the sudden collapse of the yen, after December 1931, aided Japanese exports considerably.

The recent condition of Japan's textile industry may be said to reflect the condition of the nation. This branch of the country's industry is not only the most important but also, because of different reasons, the most progressive in Japan. The textile industry is the only one that is not controlled by the government, and not dependent on govenment subsidies; it has an employment representing more than 50 per cent of the total industrial operatives of the country.

In the list of Japanese imports, raw cotton ranks first in value; and three-fifths of it is bought from the United States. Among the exports, cotton textiles and yarns take first place. It is an interesting fact that Japan now consumes annually a greater quantity of cotton than any country except the United States. There has been since 1929, despite the world-wide depression, a startling increase in the production of cotton yarns and cotton fabrics in Japan. About 45 per cent of the cotton textiles produced in Japan are exported, chiefly to countries in the British Empire and to the Dutch Indies. The shipments to China are now rather small, but the decrease may be compensated for by new markets in Africa and South America.

Not only has the production and exportation of cotton goods been increased, but the quality has advanced greatly. There is a trend away from yarns for export toward finished goods for foreign markets.

The number of spindles in Japan has shown an increase of 28 per cent during the period of 1930 to 1932 inclusive. (There has been an increase during the past year of from 60,000 to 80,000 spindles a month.) In July 1934 the total number of Japanese spindles was about 9 million, with which the Japan industry ranked seventh among the nations of the world in the number of spindles in operation; but it is second in production only to the United States. This is one indication of the country's high efficiency and intensive use of plant equipment. This development may be clearly understood from the following table showing the specific cotton yarn production:

			Increase %
1929	17,479 bales per 1000 workmen	---	—
1930	18,140 " " " "	---	3.8%
1931	21,099 " " " "	---	20.8%
1932	22,120 " " " "	---	26.5%
1933	23,950 " " " "	---	37%

Considering furthermore that in recent years the production of finer yarns has been increased, the actual increase in efficiency is greater than is reflected in this table.

In weaving, as well as in spinning, much progress has been made, particularly due to the adoption of automatic looms. The automatic Toyoda loom is quite famous, and it gives such efficiency that one Japanese operative can attend to from 30 to 40 of these looms and even more—the maximum is about 60 per operative in Japan, but only half as many in China. The license for this loom has been sold to England and recently Japanese engineers were sent to that country to initiate the manufacture of Toyoda looms.

An indication of the progress made in spinning is revealed in the fact that there is a very definite trend toward higher spindle speed—a number of mills running 14,000 r.p.m. and higher on a 1½-inch ring, with a traverse of 5 to 6-inch using special spindles and rings as well as selected bobbins.

As contrasted to conditions in some other countries outside of the United States, in Japan the complete process from spinning to finishing is usually conducted in the same mill. There is also an exchange of experiences within the strong organization known as the Japanese Spinners Association which has enabled the spinners to meet the tariff rates and restrictions applied by other countries. An indication of the general progress made in Japan is that, taking a weighted index of 26 articles, production has increased 35 per cent between 1930 and 1934 whereas the employment figure has increased by only 5 per cent.

Apart from the modernity of plant and organi-

zation, there is in Japan a national spirit which is a great asset. The Japanese workman, living a very simple life, believes that his work is not only a means of livelihood, but also a duty to his country. Such a spirit of national solidarity is undoubtedly one of the great motivating powers of Japanese industry.

Thus it can be understood that in any branch of industry the level of wages can be kept as low in Japan, even for skilled workmen, as in possibly any other country. As an example may be mentioned the illustration of a woman painting designs on teapots in the Japanese pottery district—she is one of the most famous porcelain painters, but earns less than one yen (28 cents) a day—about the same wages given to a girl operating 40 looms.

The fact that in the larger companies the female workers live in mill dormitories gives Japanese employees another great advantage. In the mill the girls receive also clothes and good education. For three meals, girls pay fifteen sen (4 cents) a day; men twenty sen (6 cents). This supplying of low cost food, etc., means an item in labor cost which does not appear in the nominal wages.

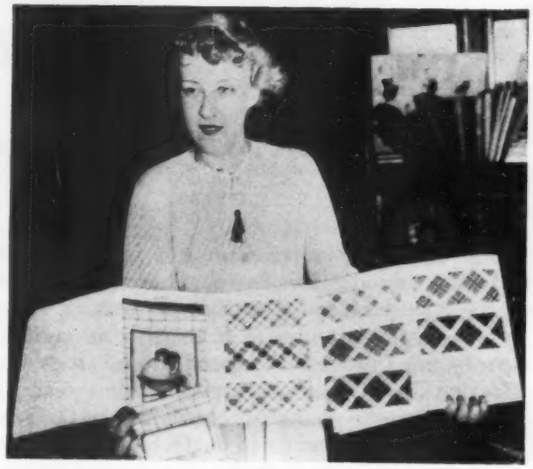
The average age of the girls who spin in Japan is 17 years; usually they stay not longer than four years after that age. The wage for a girl is about 70 sen (20 cents) a day, from which amount she has to pay 15 sen (4 cents) for food. The rest of the wage may be saved. It is the custom for girls, especially from the country districts, to spend about four years in a factory until they have accumulated enough savings to enable them to marry.

Male employees in a spinning mill earn about 150 sen (42 cents) a day, from which amount they have to pay 20 sen (6 cents) for food. But there is a growing tendency toward the employment of women in the industry. Perhaps 80 per cent of the spinning mill operatives are girls. These girls being rather small give the impression to visitors walking into a Japanese spinning mill that these are children of about ten to twelve years of age. But these spinning girls are very skilled and willing to work. Furthermore, the workers appear to enjoy their life in the mill. Although there is possibly no other country where industrial workers would accept the regulated existence of Japanese mill dormitories, the facilities provided, even though meager, appear to be better than the mill worker would have at home.

So far as could be determined, labor is not effectively organized, and we did not hear about labor troubles in Japan. Furthermore, as mentioned, the textile workers are willing to work hard, but we did not find any signs of so-called "sweated labor".

Night work for females has not been permitted since July 1929, and the daily work is cut to two shifts of 8 or 8½ hours each, whereas formerly the cotton mills operated on a three-shift day.

The world economic depression favored the substitution of medium grade and cheaper goods for more expensive textiles, and Japan was able to supply the former type of merchandise. But, in the last five years, the production of finer yarns has increased. At the present, as a matter of fact, only gassed yarns, 44s and finer, yield any margin of profit at all, whereas counts below 44s are quoted at below cost of production.



"Made in Japan"

The young lady in this photograph is displaying a swatch-book of fabrics made in Japan and being sold in this country The adjoining article presents some interesting observations concerning textile manufacture in that country . . . . International News Photo

Undoubtedly there has been too rapid a rate of increase in equipment in the last few years, and the increase in the supply of yarn has tended to weaken the market for medium sized yarn. There is, furthermore, the fear of eventual overproduction and decreased employment.

There is already in effect in Japan, a suspension or curtailment of 11 per cent in the total spindleage. Now the Japanese Spinners Association has suggested that this suspension or curtailment ratio be increased to 16 per cent for three years (effective April 1st 1935). In addition, the mills are to be shut down for four full days each month.

It appears that the spinners, in order to counteract each curtailment order, have been enlarging more and more, because there is in that country no restriction on increase of equipment. That might be the reason why larger curtailment has not already been voted; otherwise, there would have been danger of an even greater expansion of productive equipment so that the move would have defeated its own ends. I do not know whether the member companies of the association have given their consent to the resolution for further curtailment or not. Anyhow, there is no doubt that Japan is now going to face the same difficulties as other countries suffering from the depression. Then it will be a question of whether the competitive advantages of Japanese industry will continue to prevail. In any case, the solution of these problems will be difficult, and it will be necessary to increase still more, both the efficiency of the textile equipment and the quality of the products themselves.

Rayon and Silk

Japan ranks high in rayon output and her tremendous increase in rayon production during the last two years has been remarkable. Comparative

figures for the rayon yarn output of the leading producing countries for 1933 and 1934 are shown below, in 1,000 pounds (round-figure estimates):

	1934	1933
U. S. A.	210,000	208,000
Japan	150,000	99,500
Italy	100,000	81,000
Great Britain	90,000	84,000
Germany	90,000	76,000
France	74,000	53,000

These figures show that Japan is already second only to the United States in output, and the prediction was heard at one time that for 1935 it would take first place in the world if there is no great increase in the United States production. It is estimated that Japan's output for the present year will be over 200,000,000 pounds, probably due to the great enlargements of Kanegafuchi in the rayon field.

But, as in the cotton field, so in rayon textiles a reaction has started, and overproduction is now a burning question. Thus the present trend toward rayon curtailment is not unnatural, as well as the fact that prices of rayon textiles have fallen sharply. Nevertheless, it is possible that the future of rayon looks better than that of cotton because raw cotton must be imported whereas the rayon production is rather independent. Perhaps rayon will be used more and more as a substitute for cotton, with the possibility also of its being used in mixtures with cotton or wool.

Natural silk is very important for Japan's export trade, but there is a steady decrease in production and the price of silk is lower and lower.

The following table may show the movement of important articles, taken from statistics given in February 11-20, 1935 (Unit Yen 1,000):

Articles	Exports	Articles	Imports
Cotton Textiles	14,180	Raw Cotton	38,600
Cotton Yarn	1,030	Wool	3,020
Raw Silk	7,400	Iron	5,970
Silk Textiles	2,170	Machinery	2,720
Rayon Textiles	3,220	Oil, Crude & Heavy	2,730
Hosiery Goods	1,130	Beans	2,690
Food Stuffs, Canned	1,500	Lumber	1,820
Wheat Flour	570	Wheat	1,510

Japan has made great strides in certain export industries, chiefly in the textile field, and has proved a formidable competitor in the world market. A further development may be the manufacture of their textile machinery within their own country.

"The Death of NRA"---and Industry's Responsibility

THE action of the United States Supreme Court, on May 27, nullifying the existing NRA through its unanimous decision on the Schechter "sick chicken" case, together with its other decisions on the farm mortgage case and the dismissal of Federal Trade Commissioner Humphrey by the President, threw practically the entire New Deal administration into confusion and retreat, and into immediate "huddles" to devise alternative measures for continuing its activities and preserving the gains made, as well as to perform the necessary operations to salvage other projects of the administration by making them conform to the spirit and intent of these momentous decisions by the highest court of the land.

Textile code authorities, which have been consistently conspicuous for their progressive and co-operative actions in connection with NRA, were among the first to issue calls for consideration of measures which would tend to prevent as far as possible any violent departures from code provisions during the interim of confusion; and to devise, sound, workable and acceptable means for a continuation of the salutary provisions of the codes under plans of genuine self-regulation of industry.

The Cotton Textile Industry Committee, comprising the code authority for cotton-textiles, met in Washington immediately after the fateful decision was read, and recommended continued observance of the provisions applying to minimum wages and maximum hours. There will be many developments of importance between the time this comment is being written and the time it appears. It is at present only clear that, in line with the expression of the cotton-textile code authority and those of other code bodies in the textile industry, that the preponderant opinion and feeling among the constructive elements in the mill business is that these outstanding achievements of the NRA codes be continued. Some departures from these provisions, in individual instances, are to be expected, but certain it is by far the industry as a whole hopes for means to continue them and that individual organizations will do all within their respective capacity to retain these conditions.

The direct effect of the Supreme Court's rulings on May 27 on AAA, TVA and other New Deal activities, other than to cause their advocates to "proceed with caution", is not discernible at this writing. The vicious Wagner Labor Disputes Bill, the 30-hour week bill, and other obviously radical legislation are being much talked about, by opponents and advocates, in the light of these rulings. Business men as a whole, having chafed under many undue restrictions, are jubilant; many are imbued with the optimism which comes with victory. But—

As one nationally-read commentator pointed out, the Supreme Court action has taken the ball away from NRA and given it to business, and dire consequences are inevitable if the new ball-carrier fumbles. No period in this country's economic history has witnessed the grave situation and the importance of clear, correct thinking on the part of industry's leaders which have come naturally along with this opportunity thus given to business to assert itself for less oppressive and less restrictive supervision of its affairs by Government. Jubilant enthusiasm over the decision must be tempered by a serious realization of the responsibility it imposes upon industry in groups and as individual producers and operators.

Cork Rolls and Other Spinning Topics Discussed at Clemson Meeting

AT ITS first meeting of the year, on Saturday, May 11, in the Engineering Building at Clemson College, S. C., the Spinners' Division of the Southern Textile Association held an interesting discussion meeting. The attendance was largely from South Carolina and the discussion was concentrated upon subjects pertaining to print cloth spinning, representing the predominant type of work in that state. Joe Cobb, chairman of the division, presided and conducted the discussion in a capable manner.

After the invocation, and a brief talk by Dr. Eugene W. Sikes, president of Clemson, Mr. Cobb opened the practical discussion which was devoted to a set of questions that had been submitted to a number of the men in advance for reports.

Discussion on Cork Rolls

Cork rolls for spinning frames came in for an extended discussion during the first part of the meeting. The first man reporting stated that, "I have run cork rolls in the card room and in the spinning room, and our trouble has been that we have always had more ends down on cork than on either calf or sheepskin." W. G. Day, superintendent, Cowpens Mills, Cowpens, S. C., said, "We are right now in the process of changing over from cork to calf skins. We had more ends down on the cork, and we find we get more even yarn and better breaking strength with the calf."

J. R. Strickland, of the Appleton Mills, Anderson, S. C., expressed similar opinion, stating that he had tried out cork rolls three times and that his experience with them had always been disheartening. He said that the cork rolls that he put in were so large that he had to open up his cap bars and this made more ends come down and produced uneven yarn; that with the cork rolls the yarn showed up with more of what he called "whiskers" on it. He added that he is changing over to calf skin.

Thomas J. Willis of the Greenwood (S. C.) Cotton Mills reported that, "we have something like 60,000 spindles on cork rolls and are getting very good results. I cannot give you any comparison between the cork and the leather, but we are getting an average of 60 pounds breaking strength on 31s warp; and our end breakage is around 35 per thousand spindle hours. The fibers are apparently just as normal as could be gotten with the leather rolls." In answer to questions he stated that they had not turned down their arbors, and that the breaking strength mentioned on 31s is secured from 1-inch Middling Western cotton.

"We have been running 60,000 spindles on cork for 2½ years," said Harry H. Purvis, superintendent, Chicopee Manufacturing Corporation, Gainesville, Ga. "However, we still have a few frames that we keep on leather just for comparison and experiment. We cannot find any difference whatever in the breaking strength or the ends down on the cork as compared to leather, but we do find that there is more cleaning to do with the cork. The cork seems to shed more. But the biggest advantage that we get from the cork is in the cost, which is about 40 per cent less than with leather. The rolls that we turned down have more of a cushion on them and that is better, particularly if you have any trouble in starting up on Monday morning."

J. S. Lockman of Monarch Mills, Lockhart, S. C., asked Mr. Purvis whether he had made any change in his hank roving in going onto the cork, and Mr. Purvis replied that he made no change, but that there might have been just a point or two difference in the yarn number. "We did find a slight variation, and I think the yarn made from the cork was a little lighter, due to the drafting quality. We get less clearer waste with the cork, whereas with the leather it collects on the top clearer." Answering further questions he stated that he had regular draft spinning up until a few weeks ago but that he is now changing over to long draft. Thomas J. Willis answered a question by stating that all of the mill he referred to is on long draft.

JOSEPH C. COBB, chairman of the South Carolina Spinning Division, who presided at the Clemson College meeting . . . . . .

H. H. Willis, dean, textile department, Clemson College, was asked to report on a test he had made on cork and leather rolls. He stated that this test was made with an 8-bale mix of cotton, one test being run on 20s yarn, and one being run on 30s yarn, and that he noticed no appreciable difference in the end breakage between the two types of rolls, and that the strength of the yarn was slightly better from the cork. J. S. Lockman asked Mr. Purvis whether he had ever measured off a certain length of roving and run the same length through cork and leather rolls. Mr. Purvis replied that he had done so and that the roving runs out at the same time on both kinds of rolls, "but you do have more yarn on the bobbin with the cork rolls than with the leather."

The matter of buffing cork rolls was brought up by Newton G. Hardie, who pointed out that his ex-

Reported by Robert W. Philip.

perience is that when cork rolls are first put in they run splendidly but that after awhile they get rough and the end breakage goes up. Thomas J. Willis reported that they buff a whole frame at a time.

The matter of difficulty in starting up on cork rolls on Monday morning was raised, and J. L. Brannan, overseer spinning, Langley Mills, stated that, "on Monday morning we have quite a lot of lap-ups, especially after it has rained over the week-end. Cork rolls do lap up more, but as to the other details we find no material difference." He reported a test of breaking yarns from cork and leather rolls on opposite sides of the same frame, and found practically no difference, on long draft. "I notice more flyings on the cork rolls than on the leather," he said.

Mr. Cobb asked him whether he found more lint on the top clearer, and Mr. Brannan said "No"; adding that his back guides are cleaner on the cork.

The next prepared question asked, "Do you have any method for predetermining the life of the cork roll, that is, the length of time that it should run before re-buffing?"—but there were no specific answers, the discussion continuing along the line of general experience with cork rolls. The chairman asked for a report from any fine goods mill, and Mr. Waldrop of Drayton Mills, Spartanburg, said, "We have had two frames on cork that have been running for two years, and from the general discussion my report would be along the same line. I do not notice any difference in the breaking strength or ends down, but the most important thing we have noticed is the life of these cork rolls. We have been running them for over two years on various numbers, with varying twist, as a matter of fact I ran one frame for six months on a combination of cotton and waste, and changed that frame to 80s and 90s, and the rolls are still running."

J. S. Lockman

J. L. Brannan

Opinions as to the use of cork rolls in the card room were requested by L. E. Wofford, night superintendent, Inman Mills. Robert T. Stutts, overseer carding, Monarch Mills, Lockhart, S. C., stated that cork rolls do not run as good in the card room as leather rolls, expressing the opinion that the clearer waste which does not show up on the clearers goes into the yarn. He said it is a bad practice to have both cork and leather in the same card room because this will produce uneven roving on account of the draft. Mr. Burnham of Cowpens reported that his experience with cork rolls, over a period of three years, has been unsatisfactory from the standpoint of producing uneven work—which his weaver, he said, calls "link sausage"—and that they are now changing to calfskin, as reported by Mr. Day. Mr. Burnham said that after putting in calfskin he had been able to speed up his front roll on spinning by eight turns, but that this was not possible with the cork. He said he had been unable to run cork rolls at all satisfactorily without re-buffing them every three months.

Several men returned to that 31s yarn breaking 60 pounds, which Mr. Willis had reported. He stated that the breaking strength is secured on a Scott No. 7 motor-driven tester, and that this yarn is tested in the spooler room, being taken there immediately from the spinning room without time for it to take up a great deal of moisture. This yarn has a twist multiple of 4.73, and is made on brand new frames.

There was a brief discussion here among several of the men as to the vital importance of making certain that the testing machine is accurate, the suggestion being made that calibration tests should be carried out frequently to make certain the machine is performing correctly.

With regard to breaking strength of yarn, J. L. Brannan pointed out that, "you can affect your breaking strength injuriously in the spinning room, but you certainly must build breaking strength before it gets to the spinning room. First, it must come from the cotton, and then comes the opening and the picking and the carding and the drawing."

The biggest trouble in breaking strength is the man who breaks it, was the expressed opinion of J. S. Lockman. Thomas J. Willis pointed out that it is necessary in breaking yarn to have some statistical measurement of the yarn strength. Mr. Strickland explained that one way he works this is to have a break constant, and adjust the strength of varying yarn numbers according to this. In answer to a question Mr. Purvis reported that his 30s warp yarn, made from one-inch Western cotton, breaks 56 pounds.

"If running a 15/16-inch diameter cork roll in the front line, and the breaking strength is equal to that with sheepskin rolls, what effect will it have on the breaking strength to put in a 1-1/16-inch diameter cork roll in the front line and a ⅞-inch diameter roll in the middle line?", was the next question. C. C. Roberts, of Pelzer Manufacturing Co., was called upon and stated that, "I would not think there would be any difference in the breaking strength." Thomas J. Willis reported for Winder Gary, stating that Mr. Gary's opinion was that considering theoretically the conditions as stated in the question," you would get a better yarn, but practically, it doesn't work out that way." Mr. Willis reported that Mr. Gary had tried different sizes of rolls from ¼-inch solid steel roll on up to the average diameters, with different sizes of leather rolls, and that so far as he could tell there was no difference in the results.

Life of Leather and Cork Rolls

"I had a cork man with me for three or four weeks," reported J. S. Lockman, "and he made his own tests, with a 1-1/16-inch front roll and ⅞-inch middle roll, and I have his figures and on every test the cork showed a lighter yarn than the sheepskin."

The next question asked for reports on the life of leather and cork rolls. A. L. Ellis, overseer of spin-

ning, Pelzer Manufacturing Co., stated, "We have had considerable experience with cork and leather rolls. Our front roll is 15/16-inch in diameter, shell rolls, and my experience is that leather will last about four months of 80 hours per week. We have had over half of our job on cork rolls, but we have recently been going back to leather. On a 1-1/16-inch roll, the cork will last about 20 months on the same running time, buffing them about every four months, double shift. We find that the cost of the leather-covered rolls is about 2½ cents for the shell rolls, for four months, or 12½ cents for 20 months; and for the cork, about 10 cents for the 20 months, so the cork is about 25 per cent cheaper, in material; that does not take into consideration the cost of recovering the leather or re-buffing the cork, and that would add some more to the economy of the cork. However, we find that the cork roll does not give us as good results as the leather. We made many tests, and averaged two ends down on the cork to one on the leather. Therefore, we are going off of the cork rolls gradually; as we take them out we are replacing them with leather." T. G. Roach, assistant superintendent at Pelzer, reported that tests showed that their yarn made on cork rolls was lighter and that the ends down were considerably higher than with the leather.

W. P. Leister

W. W. Cobb

"After going onto cork rolls did you change your cleaning schedule; did you have to do more or less cleaning?" was the next question. Mr. Ellis reported that, "we did not change our cleaning schedule, but our spinning was not as clean, especially the rolls. There was less clearer waste, and, contrary to one of the other reports, I find that a lot of it falls down in the back guides, and evidently some of it goes into the work." He added in answer to questions that they have mostly regular draft, but did have some on long draft, with the cork rolls. At present they are not running any cork rolls on long draft. Their warp frames on long draft are shut down temporarily, and their filling frames are changed back to leather. Asked as to his draft, W. G. Day reported that he is running 15.4 on filling, with unweighted middle rolls, regular draft system.

Cleaning Schedules for Cork Rolls

"Some months ago, at a mill where I was previously connected," stated Chairman Cobb, "we changed over our warp spinning from regular to long draft, and for quite a while we had a very high roller cost due to the fact that we had more waste collecting in our rolls and choking up the rolls, and immediately when a leather roll chokes up it will tear up. We turned the arbors down and put on some heavy cork, and our work ran much better, with a better roller cost, and fewer ends down, and we could run our regular number of spindles per spinner, whereas with the leather we had to cut it down. On regular draft filling, we could not get as good results with the cork as with sheepskin. But on the long draft warp, we got 1½ pounds better breaking strength and our work did run a great deal better. We did not change our cleaning schedule." W. W. Cobb of Cateechee, S. C., raised the point that if with regular draft spinning the same amount of overhauling and better preparation that is customarily carried out in installing long draft were done that possibly more people could show much better results with regular draft spinning.

The chairman read an answer from J. Y. Jones, superintendent, Newberry Cotton Mills, regarding his experience with cork rolls. Mr. Jones reported that he had run a test on 28 frames on cork and a like number on sheepskin; that he found 133 pounds more scavenger roll waste on the cork than on the sheepskin; his end breakage was 55.20 on cork, and 37.5 on sheepskin. The breaking strength on average 18s was 82.2 on cork, and on average 18.74s was 81.94 on sheepskin. He made no distinction in his cleaning schedule between the cork and leather.

A. H. Cottingham, general manager, Victor-Monaghan Co., which operates a number of plants, next made a report in connection with the cork roll discussion, stating that, "some years ago we had 16,000 spindles on cork, but I must say that this was before the cork was as good as it is now. We found that our spinning did not run as well with cork as with leather. We did not have the buffing machine at that time, and we had to send our rolls to the cork company's shop at Greenville for re-buffing and we found that we would have nine or ten different sizes of rolls in the spinning room at the same time, and so we discontinued it. We had turned down the arbors and had to buy new arbors.

"We have been fooling with long draft as long as anybody in the country—in fact we were the first to put it in—and we tried most everything on it, cork, and calf, and sheepskin, and we find that we get the best results with leather, and we are now using a chrome tanned calf, and we think we are getting wonderful results.

"As to cork, I think that now if it is given the proper attention, the results will be about the same. However, we feel that this is a matter of opinion.

Finds It Profitable to Date Cots

"In two of our plants, we date all of our cots, and in going through the roller room the other day I ran across a few rolls that had been running for five or six years, and I found some that had been running only a few weeks."

The cork roll discussion was concluded by an observation from W. W. Cobb, that, "I do not believe you will have as many different qualities of cork as you will find in sheepskin. There is quite a variation in the grades of skins, and when you say sheepskin, you are cobering a multitude of sins."

Experiences With Automatic Roving Tester

"What has been the result in the spinning department where an automatic roving tester is used in the card room?", was the next question. Ray Sweetenburg, assistant superintendent, Ware Shoals Manufacturing Co., responded, "we do not have any figures on our ends down, etc., since we started using the roving tester, but we are satisfied with it. We have taken out from 1 to 13 teeth of twist on our fly frames. The greatest amount of twist was taken out on the frames on our longer staple (1⅛-inch) cotton. On such things as tension, the roving tester helps wonderfully to get the tension straight, and enables us to start our cone belt in the proper place. We had to cut our spindle speed a great deal in the card room." Mr. Sweetenburg stated that he is making 32s warp yarn out of 1⅛-inch Strict Low Middling cotton, with a 4.30 twist multiple, on long draft, out of a 3.60-hank roving with twist of 1.13 multiple; his intermediate roving is 1.28 with 1.09 twist multiple; his slubber roving is .58 with 1.06 twist multiple.

"With us," stated Mr. Purvis of Chicopee, "it is not so much a matter of taking out twist as it is of evening up on the tension. We find after going over the frames that our chart started off at the top, and as the bobbin became empty, it showed that it was weaker. Our greatest benefit from the automatic roving tester came from adjusting the frames so we would have the same tension as near as possible, and this eliminated a lot of break-backs in the spinning room, particularly on the small bobbins." Mr. Purvis uses 2.00-hank roving with a twist multiple of 1.19 for making his 30s.

Mr. Sweetenburg answered a question as to his speed by stating that he runs 5.75 r.p.m. on his slubber; 900 r.p.m. on his 9x4½ intermediates; and 1,000 r.p.m. on his 8x4 speeders.

"I think the automatic roving tester has done more for us than any small investment we ever made," reported Mr. Cottingham. "At first, some of the carders were reluctant to go into it. However, in putting in long draft we learned that we were putting in too much twist in our roving. After we got this roving testing machine we found that at some stage in making the bobbin that it was very uneven. This machine helped us to correct that. We have already taken this machine to four of our plants, and really I think it is a great thing. We took out lots of twist, and now the carders and spinners are very delighted with it. In one or two instances we did take out too much twist, but we were more cautious in doing that and when we found out that we were right, we went ahead. I can heartily recommend this machine to any mill."

Mr. Cottingham suggested the possibility of two or more small mills going in together on one of these machines, since he said it is not necessary to use it constantly at any one plant.

"We do not test our roving at regular intervals," said Mr. Cottingham. "The machine goes from one plant to another and now we are going back around. We have made a big improvement by reducing the speed. You will find that your tensions are pretty badly off if you have never tested them, and you do not know it."

"We had pretty much the same experience," reported J. W. Wood, general superintendent, Gossett Mills, Anderson, S. C. "We have five card rooms and we are using this machine in them. We did not have to change as much as 13 teeth, but we certainly did find we were able to change our twist multiples quite a bit, and we had the same experience in finding that we had an unevenness in our roving from full to near empty. We cut our twist multiples but we did not have to cut our spindle speed. We feel that we have paid for our roving tester over and over. It has been a great help in evening our numbers of yarn and in increasing our breaking strength.

"Of course, you must keep in mind the fact that you must pull that roving off of the bobbin at the spinning frame and it is foolish to take out so much twist that the ends will break back in the spinning.

"In the card room, we should not run tensions too tight; if you have been running a hard twist in the roving and running the ends about as tight as a fiddle string, you are going to run into trouble in the spinning. You must run a reasonably slack end on the fly frame."

Humidity on Long Draft Spinning

The next question asked whether in installing long draft spinning, the recorded humidity in the spinning room had been changed. "We had to reduce this to about 50 or 55 per cent," reported Newton G. Hardie. Asked why, he said, "because the roving is softer in the creels and it will take up the humidity much easier." This same experience was confirmed by Mr. Brannan and C. W. Leister of Victor-Monaghan Company, Walhalla. Mr. Sweetenburg reported, on long draft, a humidity of 60 per cent when making his 32s out of one-inch cotton, and said they cut this to 50 per cent in making the same yarn from 1⅛-inch Strict Low cotton.

Making Aprons for Long Draft Spinning

The next question asked whether it is better to replace aprons on long draft spinning periodically or as they wear out. C. W. Leister reported that they replace their aprons as they wear out. He said they have tried making their own aprons from a chrome calf leather. Mr. Cottingham reported that they have not definitely decided whether that is the best policy, and told of a man from Atlanta who had recently called on him with a testing device which appeared to be similar to a cloth thickness testing device for measuring the thickness of skins. Mr. Cottingham said that with this machine there appeared to be a surprising variation in the thickness of skins he had been getting from the machine manufacturers.

W. E. Hammond, superintendent, Balfour Mills, stated that, "we inspect our cots when we clean our steel rolls about once a year, and we do not change them unless one has worn out. We change about three to five on a frame once a year."

Mr. Hammond stated that they had experimented

with making their own cots, but that the leather makers do not recommend this unless a mill has the necessary equipment. He stated that he buys his cots from the machine manufacturer and believes that the difference in the cost is well worthwhile.

A question was asked by J. S. Lockman as to how mills with long draft clean the cotton off of the steel rolls. C. W. Leister reported that they clean from the under side, but stated they had tried a commercial device which resembles a small electric drill with a long spindle on the end, which in revolving picks up this waste. Mr. Cole of Langley reported the use of this device with full satisfaction.

Whether mixing 15/16-inch and 1-inch cotton will affect the evenness of yarn on the regular system of drafting and on long drafting, brought a reply from Mr. Leister that it is not possible to make as even yarn with staple mixed as when running them separately, and that in his opinion there would be no difference regardless of the type of drafting used. E. W. Edwards of Pelzer confirmed Mr. Leister's statement that more even yarn may be produced running different lengths of staple separately than when running them together.

Automatic Bunchless Cleaners in Spinning

Experiences with the bunchless automatic cleaner over spinning frames were next requested. Thomas J. Willis said, "It is one of the best things I can think of for spinning on long draft where you have so much fly and lint." Mr. Snipes, overseer spining, Mathews Cotton Mills, Greenwood, reported that, "it is one of the best things you can have in the spinning room." He said they cut their humidity about 3 to 4 per cent when putting in the cleaners, and, "we would not want to do without it on long draft. On the automatic cleaners you keep the backs all blown out clean, and there is no lint flying around the room. We think that with it we get a better yarn and cleaner work and better spinning any way you look at it."

The question of variable speed drive on spinning frames came up but no one present discussed it.

The next subject pertained to what circle of traveler is used on spinning rings. J. S. Lockman reported using a ¾ circle on No. 1 flange on 30s. He prefers the round point traveler on high speeds and long traverses, but the square point otherwise. Mr. Strickland uses a ¾ square point traveler on No. 1 flange. He said that the round point is "half worn out to begin with", and that the square point does not unthread at doffing as easily as does the round point. W. E. Hammond uses a ⅝ circle on 30s warp and 40s filling. A. L. Ellis reported using Circle 1 in the 0s, and anything heavier than 0s Circle 2; on 2-inch rings, front roll speed 120 r.p.m., square point, 6/0 traveler. Mr. Waldrop reported that he uses some of both square and round point on No. 1 flange ring: "For a long while we used the round point, and went onto the square point altogether, because when the frames stopped for any reason we would get kinks, and a great many times they would come off. But in some cases we had to go back to the round point because on finer numbers there are more ends down with the traverse at the top on the square point. We would rather run the square point altogether, but we cannot always do this satisfactorily."

J. S. Lockman made a comment at this point that for 50 years spinners had been trying to find a traveler that would regulate the yarn at the bottom and at the top of the traverse, and that it seems to him that if variable speed drive is worked out successfully that this would be the answer to that prayer from the spinners.

The next question asked why it takes a heavier traveler for a worn ring than for a new one, and it was brought out that after a traveler becomes worn there is less friction or drag on the traveler.

The matter of end breakage per 1,000 spindle hours and the number of spindles per spinner next came up. It was asked how many spindles a good spinner could run if the end breakage is 37 per 1,000 spindle hours. W. W. Cobb reported that on 30s a spinner with that end breakage should run 12 to 14 sides or from 1,600 to 1,800 spindles. Mr. Sweetenburg reported that their job on 32s warp is 1,360 spindles, and on 40s filling is 1,224 spindles. Mr. Hammond reported an exceptional test for one day averaging 19.3 ends down per thousand spindle hours on eight frames, on 30s warp made from 1-inch Western cotton, 118 r.p.m. roll speed and 10,000 r.p.m. spindle speed. Frank D. Lockman, superintendent at Lockhart, reported that he had a spinner check up once and in eight hours she pieced up 765 ends on 43s warp, 107 r.p.m. spindle speed.

There was some discussion here as to methods of making end breakage tests, several explaining their procedure of having a chart made up which classifies each end by cause, and having the checking done by a special man rather than by the operative himself or herself. Thomas J. Willis pointed out that in his experience it is very important to consider the unclassified ends as a means for reducing the end breakage. It was generally agreed that around 35 ends down per 1,000 spindle hours on warp and 45 on filling would represent good spinning. F. D. Lockman said he had a record kept by a section man over a three months' period and his end breakage ranged from 50 to 178, and that on 30s warp and 43s filling he would be satisfied if his end breakage ran around 60.

At this point H. H. Willis was requested to describe the new band tying device, for tying on bands at predetermined tension on band-driven spinning frames. Mr. Willis pointed out that his tests coincided with others which showed around 20 per cent saving in power. He reported that even on tape driven spinning he found a variation of as much as 300 revolutions per minute in the speed of adjacent spindles. He said he had not run tests sufficiently long to determine the life of bands tied on by this method, but that it seemed reasonable that if bands are tied on at a uniform tension they should last longer and give more uniform running spindles. Someone asked the question as to the advisability of conditioning bands before applying them. Thomas J. Willis

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Cotton-Textile Work Assignments Board Makes Report and Recommendations . .

Report shows no general evidence of "stretch-out"; declares standard machine assignments unwise . . . Though Supreme Court decisions nullified legal status of report, its findings are important for the record . . .

THE Cotton-Textile Work Assignment Board, appointed on December 1 by President Roosevelt to study the subject of work assignments in the cotton-textile industry, submitted its report, findings, conclusions and recommendations on May 12. The board was composed of William A. Mitchell, chairman, Earle R. Stall, of Greenville, S. C., representing employers, and Geoffrey C. Brown, representing employees.

The subsequent Supreme Court decision invalidating NRA destroyed the legal status of the board. However, since the report represents a comprehensive study of the whole matter of work assignments and contains much information of value for the record, it is being reproduced here as a matter of interest.

The report contains the following findings:

That the majority of employers have not set up machine assignments that create excessive work loads; but that some, through ignorance or otherwise, have done so.

That there are deficient as well as excessive machine assignments existent in the industry.

That it would be unwise and impracticable to attempt to set up standards of machine assignments expressed in the number of machines to be tended.

That the only fair and reasonable way to determine machine assignment or work load is by actual study and observation in the particular mill, by measure of the work load through technical time studies; and that there are more than 600 variables to be considered with reference to work load.

That it would be unwise to set up regional boards with district impartial chairmen to study, investigate and regulate machine assignments or tender decisions on them.

That mills should not be required to file a petition, wait a period of time, etc., before changing a work load; that such procedure would tend to discourage the purchase of improved machinery.

The report as a whole is an interesting document, which is reproduced here as a matter of wide interest to the entire industry. The body of the report follows:

Activities

1. The Board organized and held its first meeting on December 1, 1934. Since then we have consulted with officials of the United Textile Workers of America, mill employees, mill executives, officials of the National Recovery Administration, Cotton Textile Institute, American Cotton Manufacturers Association, National Association of Cotton Manufacturers, National Rayon Weavers Association and Textile Machinery Manufacturing Industry.

2. The Board employed trained assistants, thoroughly experienced and eminently qualified to make such time studies and investigations of machine assignments and work loads as are necessary in arriving at decisions with reference to alleged excessive increase of machine assignments.

3. The Board and its assistants have studied machine assignments and work loads in representative mills in the cotton textile industry. Some of these plants were selected by the Code Authority affected, some by the United Textile Workers of America and some independently by the Board.

4. The Board's assistants have investigated complaints alleging excessive increases of machine assignments in 35 mills, against which complaints have been filed.

5. The Board sent out questionnaires to obtain supplementary data needed to assist in arriving at conclusions and recommendations.

General

It has been felt that a full and detailed description of conditions and practices in various plants in the industry would be unnecessary in this report and therefore has not been included in it. It has been thought advisable, however, to include some explanation of the general methods and practices found, with the essential principles involved.

Back-Ground of Specialization Methods

Following the World War, practically all industry began introducing scientific management and specialized methods in addition to improved machinery. This was perhaps most noticeable in the automobile industry. This progress has not been confined merely to the manufacturing industries, however, but has been very noticeable elsewhere. Adoption of modern agricultural equipment enabled a farmer to work in a different way, tending more land and securing much more product per worker, without increased effort.

Better equipment and improved methods throughout this country's industrial progress have resulted in increased production per operative, improved quality, lower costs, wider markets and increased consumption. And along with this has come better wages, shorter working hours and higher standards of living. Specialization has enabled workers to accomplish more and earn more by reason of skilled operatives being on the more skilled tasks, with their simpler duties being passed on to the less skilled workers. Proper re-allocation of work tasks has been brought about through improved machinery and improved manufacturing conditions and as a part of better management and methods, enabling more production per machine or per operative. The principle is not new, therefore, and has been going on during the whole industrial progress of this country.

Specialization in the Textile Industry

Much progress has been made in the Textile Industry during the last few years, both in machinery and more recently in methods. Mechanical progress has increased the efficiency of many machines. They are better made, simpler and easier to operate and an operative can look after more without increased effort. Methods of manufacturing, likewise, have been improved by using better raw materials, producing stronger yarns, effecting more favorable working conditions and removing from the skilled worker the simpler duties and turning them over to less skilled persons. Properly done, this simply means that less time is required per operative per machine and enables handling of more machines with no more work effort.

The specialization system, which has been called the "Stretch-Out", is not confined to weaving but is applicable to many of the other processes in textile plants. However, it has been more widely used in loom operation and its workings in a cotton mill may be illustrated by the following example.

The practice formerly was that a weaver handled a small

Though the Supreme Court decision on the NRA evidently nullified the legal status of this report, the findings and reports included in this document make it one of lasting interest and value, and it is therefore published practically in full. Even the recommendations for the then contemplated permanent set-up substantiate to some extent certain contentions of members of the industry . . .

number of looms and performed practically all the operations involved. In many cases he was supplied with poor yarns, resulting in excessive yarn breakage and excessive loom stoppage, and as a consequence was pressed to tend even a small number of looms. Under the specialization system, however, the simpler but time-taking duties are delegated to others and the weaver's entire attention is given to re-tieing broken yarn, starting the loom and repairing defects which would cause imperfections in the cloth. Under this system, operatives other than the weavers perform the work of replacing the filling yarn, which task alone formerly took about half of the weaver's time; others take off the cloth and still other operatives do the oiling and the cleaning. Relieved of these simpler duties which required more than 50 per cent of his time, the weaver is able without additional effort to look after a substantially greater number of looms and thus utilize his skill and ability in the producing of more cloth.

Definitions

The term "Machine Assignment" refers to the number of machines which an employee tends.

The term "Work Load" refers to the effort involved in performing the task.

Findings and Conclusions

1. The Board is convinced that the great majority of employers in the cotton textile industry have not set up machine assignments that create excessive work loads for the employees.

2. The Board is convinced that, through ignorance or otherwise, there are some few employers in the cotton textile industry who have set up machine assignments that may create excessive work loads on some jobs.

3. The Board is convinced that, while there are some existing excessive machine assignments and work loads, there are also some existing deficient machine assignments and work loads.

4. (a) The Board is convinced that it would be unwise and impracticable to attempt to set up standards of machine assignments in the cotton textile industry, expressed in the number of machines to be tended.

In each manufacturing process of a textile mill there are many factors which affect the way a machine runs and the time and attention required to look after it. In a well run plant—using good raw material, with proper operating conditions and good running work—an operative may tend, with much less effort, substantially more machines than is practicable in another mill on the same class of products but where conditions are less favorable. Moreover, conditions are not only different in every mill but vary constantly within the same mill. It is impracticable, therefore, to set up standards of machine assignments in terms of number of machines to be tended.

Any standards that could be considered reasonably just to the well run and properly equipped mill, using good raw materials, would result in machine assignments that would be excessive in plants where the conditions were not so favorable and would mean that the employees in the poorer plants would be subjected to a burdensome, excessive and perhaps impossible work load.

(b) Because of the many variables which have to be considered, the only way a fair or reasonable machine assignment and work load can be determined is by actual study and observation in the particular mill concerned.

(c) The fair or reasonable number of machines for an employee to operate can be determined only by measure of the work load, through technical time studies and observations based on a uniform method such as has been used by this Board.

(d) In making a complete study in a cotton mill, from opening room through weave room, but not including subsequent processes such as dyeing, bleaching, finishing and packing, there are more than 600 variables that must be taken into consideration with reference to fair and reasonable work assignments and work loads.

(e) Our conclusions expressed in this section are definitely proved by the wide variances in data obtained from the mills. We exhibit the following, which has been taken from the questionnaires and which illustrate the wide differences in only a few of the variables found in mills manufacturing cotton cloth:

Cotton Used	Highest 1⅝"	Lowest Short Cotton Waste
Opener Room:		
Cotton fed, per machine, 8 hrs., lbs.	16,200	968
Picker Room:		
Production, per machine, 8 hrs., lbs.	4,200	1,000
Cards:		
Production, per card, 8 hrs., lbs.	250	22
Drawing:		
Time full can runs, hrs.	8	1
Time between doffs, minutes	105	28
Speed of Front Rolls, RPM	369	155
Production per delivery, 8 hrs., lbs.	740	49
Slubbers:		
Spindles per machine	120	60
Hank Roving made	.90	.40
Time between doffs, hrs.	1.8	½
Production per spindle, 8 hrs., lbs.	33	10
Intermediate Frames:		
Spindles per machine	208	80
Hank Roving made	4.00	1.00
Time between doffs, hrs.	4	1
Production per spindle, 8 hrs., lbs.	12	1½
Speeders:		
Spindles per machine	208	136
Hank Roving made	14.00	3.20
Time between doffs, hrs.	10	2
Production per spindle, 8 hrs., lbs.	4.8	¼
Warp Spinning:		
Spindles per frame	320	180
Yarn sizes	100s	4½s
Time bobbin runs in creel, hrs.	192	8
Production per spindle, 8 hrs., lbs.	.9	.032
End Breakage, 1,000 spindles, per hour	104	12
Time between doffs, hrs.	12¾	1⅜
Filling Spinning:		
Spindles per frame	320	176
Yarn Sizes	100s	2.4
Time bobbin runs in creel, hrs.	192	8
Production per spindle, 8 hrs., lbs.	2.5	.03
End Breakage, 1,000 spindles, per hour	178	20
Time between doffs, hrs.	11	¾
Slashers:		
Speed, yards per minute	60	12
Time to fill beam, minutes	120	12
Time to lay in set, minutes	180	35
Beams produced, 8 hrs.	15	3
Weaving:		
Speed of looms, picks per minute	200	40
Time warp lasts in loom, hrs.	972	48¾
Time bobbin lasts in loom, minutes	21	1½
Stops per loom, per hour	6	.18
Number of looms per weaver	120	1
Number of looms per fixer	204	24

5. The Board is convinced that it would be unwise to set up regional boards with district impartial chairmen to study, investigate and regulate machine assignments, or to render decisions with reference to same.

(a) Establishment of regional boards would not eliminate the need of a central board and would involve a great amount of duplication of personnel, for the reason that each such board would require its own staff of executive assistants and office force as well as technical investigators. The district chairmen necessarily would have to be experienced and very high type men and it would in all probability be difficult to assemble the required personnel to set up a number of complete regional organizations. Even if the proper men could be found, this would obviously be quite expensive and would have many disadvantages. Under the regional board set-up there would naturally be great possibility of conflicting and varying decisions and lack of uniformity in procedure and in interpretations. Regional boards, even with the best of intentions, could hardly avoid such variations.

(b) In addition to variations in decisions, region-mindedness would, we believe, inevitably develop under regional boards. Labor and employers might co-operate to endeavor to secure what might seem to be a competitive advantage for one establishment, or one area, over another. Organizations have been known to subordinate national to local or regional interests. The motive for creating regional differences would be strong and it would be difficult for any group from outside the region to intervene successfully.

Even an otherwise impartial chairman might have or might develop a tendency to partiality towards what seemed

to be the interests of the region within which he is functioning. While it may not be impossible, in theory, that some way might be found to prevent region-mindedness, we believe that in practice it would be extremely difficult, under a regional board system, to prevent the development of regional differences.

6. The Board is convinced that it is unnecessary and that it would be unwise and unjust to require a mill to secure any sort of authorization to increase machine assignments, or to require the mill to wait any period of time subsequent to filing a petition.

In the course of normal operations, a mill is frequently confronted with situations which not only necessitate changes but require that they be put into effect immediately. This is particularly true because of market demands and supply of raw materials. A mill must make the kind of goods which it can sell and even though the management dislikes to change to some other type of cloth it is frequently necessary to do so, or close down, even in mills on staple goods. Moreover, it is necessary to meet the buyer's delivery requirements.

The work-load in weaving is largely determined by the number of broken threads the weaver encounters per day; and the amount of breakage depends upon several conditions, chief of which are the character of the yarn, operating conditions and the type of cloth. On a construction of cloth with few threads per inch a weaver will have fewer breaks per loom per day than will be had in making cloth with a greater number of threads per inch and can therefore handle more looms on the goods which have less threads per inch than on the closer woven cloth. This is well understood throughout the Industry by workers as well as management and all are aware of the necessity of changes in the types of goods and generally are accustomed to the accompanying re-allocation of machine assignments.

As an example from actual mill practice, it frequently happens that the market becomes overstocked on closely woven cloth at a time when there is a demand for goods with the fewer threads and a mill, in order to keep operating, may find it necessary to take business on the simpler goods. In order to manufacture the new fabrics economically, however, the weaving assignments must be rearranged to suit the type of cloth, which in this case would mean that the weavers on the new goods would be given more looms to tend. In the merchandising of yarn or cloth it is necessary that the mill management make immediate decision when there is an inquiry for same. If the order is secured, the mill must cover at once on the required raw materials in order to obviate speculative risk on commodities in which there is frequently wide daily price variation.

Furthermore, in changing to another type of cloth it is often necessary to make changes in the preparatory processes, which may take weeks before the yarn reaches the weaving department. To meet the deliveries, therefore, the mill upon getting an order must usually begin at once with the processing.

The available supply of raw material—particularly in a cotton mill—varies and it is common practice for a mill to have to change to a different character of raw material, due either to scarcity of its customary kind or to difference in the price basis. It is a long established fact in textile manufacturing that the character of the raw material affects to a great extent the running of the work. It is very necessary, therefore, that a mill be in position to quickly vary its working conditions, and in turn to change its machine assignments, to suit the raw material put into the plant.

These conditions constantly confront every mill, even those on the simplest staple goods, and are much more serious in mills making specialties or a variety of different types of products.

Further, any requirement that a mill file a petition, wait a period of time and possibly have a hearing, appeal and delay, would tend to discourage the purchase and use of improved and more efficient machinery. It is absolutely impossible on new machinery equipment to determine the proper machine assignments until after the machines have been installed and operated over a reasonable and fair trial period. No manufacturer would be justified in buying new machinery unless he knows he will be free to get full benefit of the improvements and any handicap would tend to retard further progress and legitimate advance in the Industry.

For these reasons, therefore, the proposal of requiring a mill to secure permission before changing its machine assignments is impracticable and in principle is not adaptable to the actual conditions under which a textile plant has to operate.

7. The Board is convinced that where disputes arise as to proper machine assignments, the employee and employer should be given every reasonable opportunity and encouragement to settle such disputes between themselves. The Board feels that, in fairness to employees, before an employer increases work assignment he should notify the employees affected before such increase is put into effect.

8. (a) Everything taken into consideration—based on research and our first hand observations, concentrated and careful thought during our more than four months continuous activities—the conclusion of this Board is that the most feasible solution will be found in the setting up of a Cotton Textile Work Assignment Board, to be constituted as hereinafter recommended and to have such scope and powers as are covered in our recommendations.

(b) We believe that such a board, constituted and maintained as set forth in these recommendations, will command the respect and confidence of both employee and employer and would provide a tribunal where they could submit their problems and grievances for study and investigation and equitable decisions on matters within its scope.

(c) In our opinion, such a board should lessen the probability of future strikes, serious dissensions and discord and promote and bring about closer harmony and better understanding between employees and employers.

(d) We believe that such a board would tend to minimize the possibility of each textile State passing laws which might or might not be wise, uniform or helpful in dealing with the machine assignment problems; whereas if a properly constituted national board is set up uniformity of procedure, systematic study and investigation and uniform, fair and equitable decisions should be rendered.

Recommendations

In view of the above conclusions, we recommend that appropriate steps be taken to provide for carrying out the following plan:

1. The President should appoint a Cotton Textile Work Assignment Board, to be composed of an impartial chairman, one representative of the employers subject to the Code of Fair Competition for the Cotton Textile Industry and one representative of the employees of that Industry.

2. (a) The Impartial Chairman should be a man of recognized executive and technical ability in the Cotton Textile Industry and should have had experience in either mediation or arbitration of labor disputes and should not have been in the employ of any textile plant within the past two years.

(b) The employee representative should be a man thoroughly conversant with practices within the Cotton Textile Industry and should have had experience in the arbitration of labor disputes.

(c) The employer representative should be a man of recognized executive and technical ability in the Cotton Textile Industry.

(d) If similar boards are constituted for other branches of the textile industries, the same person should be appointed to act as impartial chairman of all such boards.

3. It is recommended that adequate appropriation be provided to cover the Board's activities.

4. The Board should have authority to select and appoint such agents and assistants as it may find necessary and to issue rules and regulations appropriate for carrying out the recommendations embodied in this report.

5. (a) The Impartial Chairman shall serve strictly in an impartial capacity, shall be responsible for the general coordination of all boards, provided other boards are set up, their quarters, supplies and financial matters, and shall be free to call the Boards together for discussions of such matters as may be of common interest to all.

(b) Matters within the Board's jurisdiction should be handled in the first instance by the two representative members of the Board, but the Impartial Chairman shall act with the Board when so requested by a member of the Board or in case of disagreement between the two representative members, in which event he should impartially consider all the facts and the Board should act as a majority of its members then determine.

Scope and Duties of the Cotton Textile Work Assignment Board

1. The Board is to be a fact finding board and independent of any supervision other than that designated by the President and free from outside interference.

2. If an employee and employer shall have been unable to arrive at an amicable agreement with reference to machine assignments then, upon petition, it shall be the duty

(Continued on page 72.)

Georgia Mill Men Express Their Convictions . . . .

Left, J. H. Cheatham, the new president; right, Albert T. Matthews, the new treasurer .

Two remarkable addresses which reflected the sentiment of its members on current political and economic trends, several forceful resolutions further expressing definite ideas, election of John H. Cheatham as president, and a wholly delightfully recreation and entertainment program—these featured the 35th annual convention of the Cotton Manufacturers Association of Georgia, held at the Cloister Hotel, Sea Island Beach, Ga., on May 16 and 17.

This organization has established a high record, not only in the effective service rendered to the industry throughout the year, but in the way of a profitable and enjoyable convention; and this year's service and convention proved no exception to the rule. "The Sun Parlor of America", on the Georgia coast, furnished the locale for the meeting, as it has done for the past two years, and there was an excellent and interested attendance.

John Cheatham Elected President

Mr. Cheatham, who is president of the Georgia-Kincaid Mills, Griffin, Ga., succeeds W. K. Moore, president of the Crown Cotton Mills, Dalton, as head of the organization. W. N. Banks, president of the Grantville Hosiery Mills, Grantville, was made vice-president; and Albert T. Matthews, vice-president and general manager, Martha Mills, The B. F. Goodrich Co., Thomaston, succeeds Mr. Banks as treasurer. Theodore M. Forbes was re-elected secretary, and C. T. Kilgore continues as traffic manager. Hill Freeman, of Newnan, George P. Swift of Columbus, N. Barnard Murphy, of Trion, and W. S. Dunson, of LaGrange, were named as new directors.

The first session was on Thursday morning, May 16. After the invocation and address of welcome, and the response, which was made by W. N. Banks, Mr. Moore presented the annual address of the president, which, all who heard it agree, was a classic of thought and gracious expression. Upon concluding, Mr. Moore received an ovation which has never been excelled for any speaker in the association's recent history. Arrangements have been made to make Mr. Moore's complete address available from the office of the association in Atlanta.

Address of W. K. Moore

Speaking of "a square deal for corporations", Mr. Moore said in part: "The corporations you represent may be located on streams, but there is no water in the capital structure. That capital represents the savings of people of small means. I venture to say that in numbers, 60 to 75 per cent of your stockholders do not pay any income tax, yet even now you pay in federal taxes 13¾ per cent with an added 4 per cent to the state, so that you must pay out over 17 per cent of your earnings before you can distribute anything to your stockholders, the majority of whom know little if anything of income tax. * * *

"Perhaps some of the troubles of the world today are due to the hate so carefully nurtured and built up in the war period. Resentment, envy, prejudice, and hate are powerful political weapons. In America today we are doing what the average family does, when it finds itself in trouble, we are falling out among ourselves, and the skillful politician is making the best selfish use of our animosities for his own advancement. Perhaps it is because we have rankled ourselves under abuse. There have been hard names applied to business men, of which 'money changers' was only a beginning. We have been charged with no regard for human values, with willingness for people to starve, with a desire for pocketbook government, and with self-interest. Any word that will put those who differ with the policies of experiment on the spot, in what Mr. W. D. Anderson calls the poisoned wells of public opinion, has been eagerly sought".

Mr. Moore declared that, contrary to adroit efforts to raise the southern cotton grower to wrath against the textile interests, the mills are friends and neighbors of the farmer. As to the processing tax, he stated that, "If we be charged with having no plan, we might suggest that if we had had to do something

W. K. MOORE, president, Crown Cotton Mills, Dalton, Ga., the retiring president of the Cotton Manufacturers Association of Georgia . .

about cotton, we could have grown a normal crop, paid the farmer 10 cents for 15 million bales, sold 10 million bales in world markets for what it would bring—and at 8 cents we would only lose 100 million dollars, which is much less than the processing tax, and 8 cents in the present dollar is below previously known prices for cotton; even at 7 cents our loss would be only 150 million dollars, and the comparable gold price of cotton will be only a little over 4 cents. Our farmers would have a better total income, and would retain their business at no greater cost to our own people."

"In this so-called age of extreme nationalism in world thought", Mr. Moore said, "our own country seems to have an international complex. We are playing Santa Claus to a needy world rather than to our own people. * * * Our own export trade was and is being dissipated through NIRA plans. Our imports of textiles are increasing at an alarming rate".

The speaker deplored the lack of leadership in the political developments of this country, declaring that the men who built America have been deprived, through prejudice, of a voice in its rebuilding. Thrift, industry, and economy have been ridiculed rather than encouraged. Rule and practice is by the untrained and unskilled. We have penalized success, rewarded incompetence, put a premium on law violation, and in farm acreage payments give the most to those who

make the most artful claims.

In concluding, and in speaking of "planned economy" and a "planned life", Mr. Moore said: "When I think of a planned life I grow very humble. I think that life has already been planned, and that planning was by infinite wisdom. * * * May we not consider that 'In the sweat of thy face', pronounced as a punishment for sin on our first father was in the mercy of God turned into a blessing? Can we bring it into accord with the slogan—No man shall starve? Won't we accept as a fact that we cannot give security or happiness to anyone? These things must be earned. A man's happiness and his usefulness are one and the same. If it were possible to pension everyone, regardless of age, at $200 a month, would we give security or happiness any real moral value? Can we compare security for old age with 'Honor thy father and thy mother'—the first commandment with a promise? Can we have a greater human and spiritual value than the millions of lives who are so living in sacrifice? Can we eliminate poverty and forget Him who said, 'The poor ye have with you always'?

"Are some of the things we have called spiritual truths laws? Does 'He that would be greatest among you, let him be the servant of all' apply in material things? Is he greatest in industry and commerce who has best served man?

"In the end you can count on the intelligence of the average man. He may be led astray temporarily by apt phrases and hysteria of mass opinion, but in the end he will be fair and reasonable. Democracy is threatened by greed. Is an unselfish conception to be lost through acute selfishness, encouraged by those who would buy public favor with public funds? These men Governor Talmadge has said are traitors to our country".

George N. Peek, special adviser on foreign trade to President Roosevelt, followed Mr. Moore with an address on "Cotton Textiles and Foreign Trade", in which he advocated a permanent foreign trade board, to unify the more than 50 present government organizations dealing with foreign trade, and carry out the responsibility of the government in meeting foreign competition.

Address of Barrie Wright

Mr. Barrie Wright, speaking on "The Rights and Responsibilities of the Employer under the 'New Deal'", presented a forceful and factful criticism of the activities of union labor organizations and of the broad, fundamental policies of the federal administration. His complete address, with that of President Moore, was adopted in full as a resolution reflecting the sentiment of the association before which it was presented. Complete copies are available at the office of the secretary in Atlanta.

Mr. Wright first discussed union labor activities, declaring that the American Federation of Labor "lost a marvelous opportunity to organize the laboring people of this country", first, "because the leaders of the federation have been unable to see the opportunity as one to serve the rank and file of labor" and "have apparently looked upon it as an opportunity to aggrandize themselves; to give the leaders greater power, greater control of the rank and file, and greater revenues for the organizations which they head"; second, because federation leadership "has made a mistake in taking a position of extreme and utter selfishness toward the employers of labor. Labor leadership demands everything of the employer and is willing to give nothing"; third, because of "the utter indifference of this leadership to any rights of the public as a whole, or any suffering or inconvenience to the public that their lust for power may produce".

The speaker then discussed recent labor legislation, touching first on the Railway Labor Act of 1926 which, he said, is different from Section 7-A, "for it seems to seek to set up a machinery available to prevent industrial warfare, whereas Section 7-A and the Labor Boards Acts seem to be designed to promote it". Section 7-A, enacted at the demand of the AFL, is, he said, "by all accepted standards of constitutional law, void". He cited rulings of state and the United States supreme courts indicating the invalidity of legislation of this kind.

Discussing the phrase "collective bargaining", Mr. Wright said the decisions of the labor board have held the right of collective bargaining to imply that the employer is bound to bargain; whereas, he said, "of all the words in the English language that imply free will and free choice, none is more positive of that implication than the word 'bargain'; the Supreme Court of the United States has held that, 'Whatever may be the advantage of collective bargaining, it is not a bargain at all unless it is voluntary on both sides'.

"On the other provisions of this statute, designed to protect union membership, the rulings of the board have been equally radical. Inasmuch as the restriction of the right of the employer to discharge his labor was directed at discharge for union affiliations, that left to the employer, without any prohibition of the statute, all the other reasons that he had ever had to discharge labor, and the statute in no sense requires the employer to even have a valid reason for the discharge.

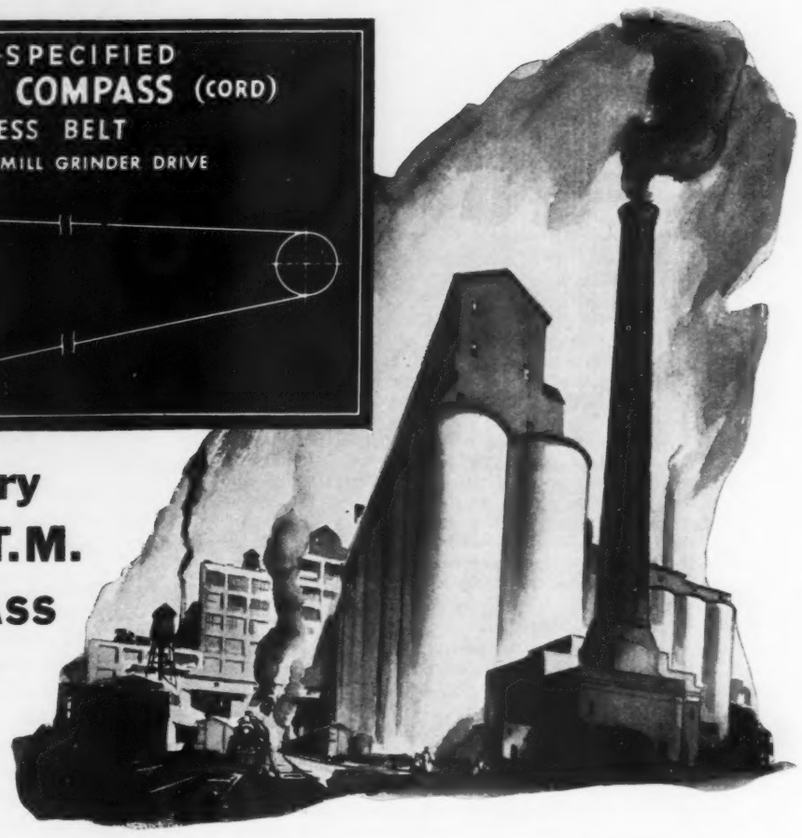
"As this condition naturally renders it difficult to prove a case where the alleged reason was that the employer discharged solely because of union affiliation, the labor boards have adopted the very un-American expedient through their rulings as to what presumptions are and when they arrive, that when the employer is charged with guilt he must prove himself innocent. The boards have even gone so far in one case as apparently to say that where the employer takes the position at a hearing that he will stand on his presumption of innocence and not offer evidence until evidence of his guilt is produced, that he creates an inference of guilt against himself".

Mr. Wright declared that the position taken by the labor boards as to "company unions" would seem "to go far indeed toward eliminating any right of free speech between management and its employees, despite the constitutional guarantee."

Stating, however, that labor legislation need give us no great concern, because "the lack of vision of labor leaders, the probable action of the courts, and the antagonism that this labor law has produced, will soon remedy the situation". Mr. Wright turned attention to a broader condition in national government which, he said, constitutes "a definite challenge to our democratic institutions, to our constitutional form of government, to American ideals of liberty, and to our economic and social system." "Business men, engaged in legitimate business, have submitted to autocratic dictation, regulation, inspection and taxation in a manner that two years ago would have seemed inconceivable. With the utmost credulity, we have accepted the principle that the way out of bankruptcy and depression is spending money instead of saving money, working less instead of more, levying higher taxes instead of insisting on governmental economy. We have been hypnotized into the belief that the way to create wealth is to destroy it; the way to distribute wealth is to limit production and increase its cost." He cited other examples of a change in government philosophy: "We have adopted a policy that has thrown away a foreign market for our produce, exceeding markets that many nations have fought many bloody wars to obtain"; "we deplore unemployment, and we set up an ideal of security, at the same time passing laws making it almost impossible for willing and anxious employers to give employment"; "as a nation we have repudiated our solemn obligations to such an extent that the Supreme Court of the United States unanimously declared it was a breach of faith, but by majority vote held that there was nothing to do about it."

"And the amazing thing about all this is that it has not been based on any mandate of the people", declared Mr. Wright. "An administration came into office, pledged to stand on a conventional and conservative platform that di-

"JINX" DRIVE MEETS MATCH



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EVERY plant usually has one hard-luck "jinx" drive. In a large mid-western flour mill it was the hammer mill grinder drive—and few drives are harder in any industry.

This particular drive requires a belt-speed of 8,000 feet per minute under a heavy load. Belt after belt had been tried, but the terrific grind literally wore them to a frazzle in three months, on the average.

Then, to cap the climax, a belt broke one busy morning, ripping out a brick wall, causing a costly delay. An SOS was sent out for the G.T.M.—Goodyear Technical Man.

He came. He saw. He analyzed—measured tension, torque and take-up to a "T"—figured load and overload—and recommended a Goodyear COMPASS (Cord) Endless Belt.

Installed over two and one-half years ago, this very same belt is still purring a steady song. *After ten times longer service than the average of all previous belts, it has lots of life left!*

Now made endless—on the job

Cases like this—and there are hundreds—prove the remarkable superiority of the Goodyear COMPASS (Cord) Endless Belt on the toughest industrial drives. And now, with Goodyear's new patented vulcanized splice, COMPASS Belts can be made endless right on the job, enabling you to enjoy their demonstrated economies on drives where heretofore impossible.

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To no small extent COMPASS' great record is due to the fact that every installation is individually analyzed and specified by the G.T.M. The cost-cutting experience of this practical expert is at your service—just write Goodyear, Akron, Ohio, or Los Angeles, California—or the nearest Goodyear Mechanical Rubber Goods Distributor.

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rectly or by implication bound it to the maintenance of the Constitution, the monetary and economic system that has existed in this country since it was founded." He said this fantastic program has been accepted without a struggle and without a whimper.

As to "planned economy", Mr. Wright declared that we have always had a planned economy, laid down in the Constitution of the United States, and cited that the acceptance of the "new deal" involves the sacrifice of three great fundamentals of our constitutional government. The first and most obvious is that every change has vastly increased the power of the Executive; that the new deal has created a "growing subservience of the legislative branch of the government"; and has built up in the Executive and the Congress an "apparent determination to wipe out state lines".

In the light of these developments, Mr. Wright urged business men to a fight to determine whether "a planned conomy of democracy or a planned economy of secret chambered autocracy is to rule America"; to "make the charge, and to recover the lost ramparts of constitutional government and individual freedom".

Thursday afternoon was devoted to recreation, including a golf tournament directed by W. R. Beldon, of Clark Thread Co. Prizes for the tournament were awarded at the banquet on Friday evening, at which Cal Tinney, a humorist of Ooologah, Oklahoma, spoke, and at which Louis L. Jones presented Retiring President Moore with a handsome pocket watch on behalf of the association, in appreciation of his services.

The Friday morning session, which concluded the meeting, was given over to reports of officers and committees. The treasurer's report showed an increase in the association's net balance; Secretary Forbes reviewed th accomplishments and activities of the association year, declaring that membership in the association is at present the largest in the history of the organization—that out of 3,250,000 spindles in he state, 3,043,000 are members of the association.

Harry B. Vaughan, director of the State Experiment Station at Georgia Tech, spoke briefly, reviewing certain of the work being done in conjunction with industry. Traffic Manager C. T. Kilgore and Chairman Fuller E. Callaway reported for the traffic department and traffic committee. J. K. Boatwright reported for the newly formed office executives division, and Charles Thompson reported for the cotton department, which held its own meeting on Thursday morning concurrently with that of the parent association. R. Hill Freeman then reported for the resolutions committee. As to national affairs, Mr. Freeman said, the committee recommended that the addresses of Messrs. Moore and Wright at the Thursday morning session be adopted in toto as presenting the views of the association, and that copies be sent to national leaders, congressmen and senators. In addition, there was a resolution requesting the President and the Congress "to lift the processing tax from our industry, and to provide the funds necessary for the proper compensation to farmers from other and more equitable sources. Another resolution commended "the courageous stand taken by Governor Talmadge in protecting the textile workers of Georgia in their right to work, free from the intimidation and coercion as practiced by the labor unions during the national textile strike." Other reso'utions, one of memorial in memory of Victor M. Montgomery and J. H. Walton, two members who had passed away during the year; another endorsing the work of the State Engineering Experiment Station, were adopted.

Report of Work Assignments Board

(Continued from page 68)

of the Board to investigate the machine assignments involved and if, after opportunity for both parties to present their views on the questions involved, it finds that such machine assignments create an excessive work load the Board may require the employer to reduce such machine assignment accordingly.

3. The Board, in studying and investigating machine assignments, should use a uniform system of questionnaire and time study sheets similar to those made up and used by the temporary Cotton Textile Work Assignment Board.

4. Any person who shall knowingly interfere with any member or agent of the Board, in the pursuit of his duties, shall be subject to a fine of no more than $1,000 or imprisonment for not more than one year, or both, for each offense.

5. When, as, and if these recommendations are adopted, every plant in the branches of industry operating under the Code of Fair Competition for the Cotton Textile Industry shall be required to post a copy of the rules and procedure where same may be read by the employees at all times the plant is in operation.

In Conclusion

We believe the above conclusions and recommendations are sound, since they (1) are based on actual facts, impartial and careful study and reasonably long observations; (2) are just and fair both to Industry and Labor; (3) provide a workable and adequate means of handling the work assignment problem; (4) provide for the worker a definite, simple, fair and effective means of appeal and of relief in case of over-load; (5) do not impose upon the mills impracticable requirements nor restrictions on the right of the individual plants that would prevent machine assignments suited to their conditions and (6) do not discourage use of improved machinery, better methods nor scientific management, which if prohibited or in any way limited would retard further progress of Industry and Labor.

Respectfully submitted,
COTTON TEXTILE WORK ASSIGNMENT BOARD.
W. A. Mitchell, Chairman,
Geoffrey C. Brown, Employees' Representative,
Earle R. Stall, Employers' Representative.

Cork Rolls and Other Discussion at Clemson

(Continued from page 65)

reported that he had once tried soaking the loose ends of bands in a mixture of one quart of neatsfoot oil and one pint of castor oil, but had left the location without determining the result of the test.

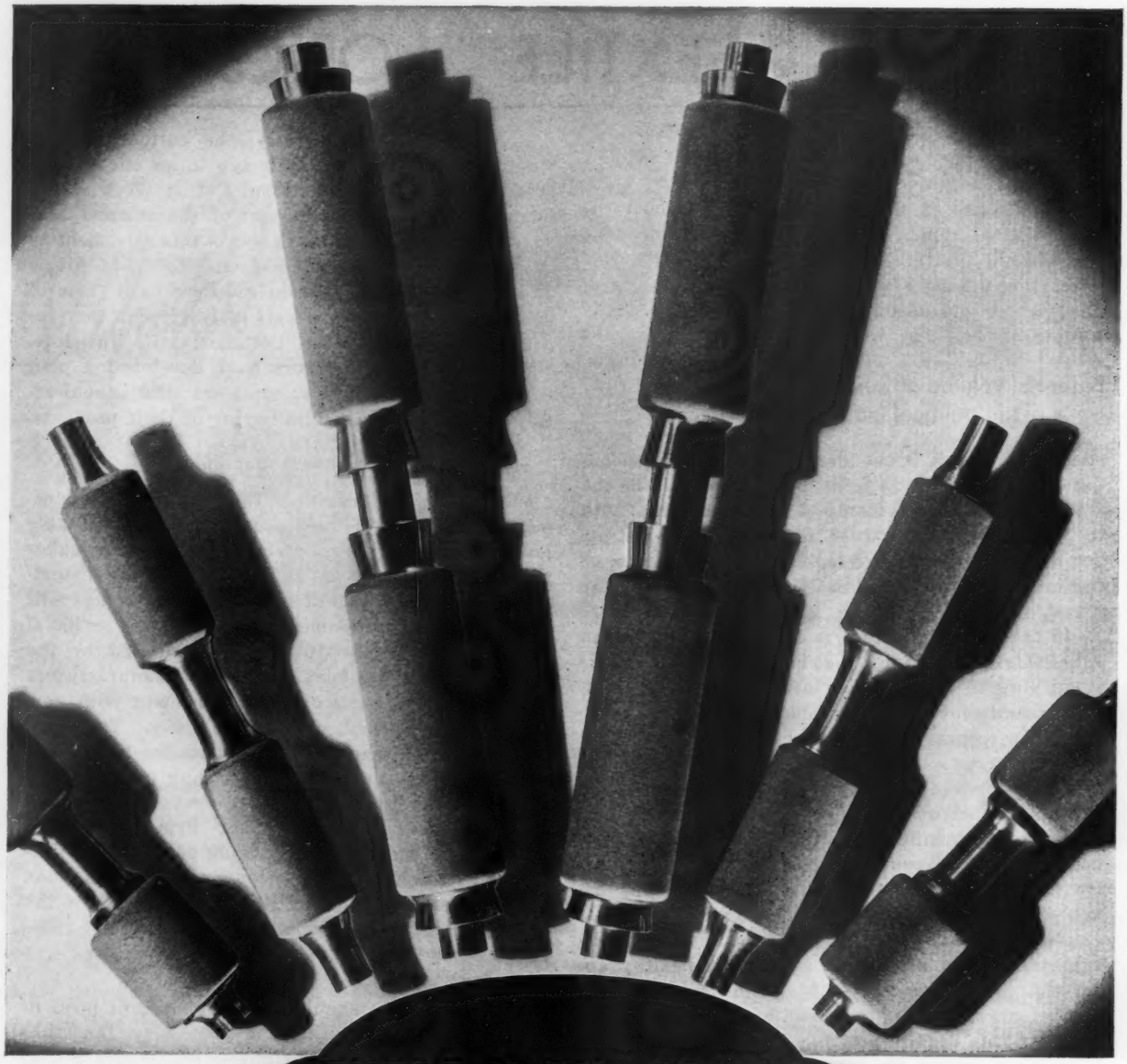
One-Process Versus Two-Process Drawing

The old question of the comparative merits of one- and two-process drawing came up as the last question. R. F. Redding reported a test which showed that in making 18s from 15/16-inch cotton, yarns made from one-process drawing averaged 18.14, breaking 90¾ pounds; and from two-process, it averaged 18.24s breaking 89¾ pounds. The greatest variation on the one-process, in breaking strength, was from 102 to 83 pounds, and on the two-process, from 102 to 75 pounds.

Frank D. Lockman reported changing a 25,000-spindle mill over from two-process to one-process drawing and stated that they ran it that way for nine months and were never able to get as good results from the one-process as from the two-process. David Clark pointed out that "if you will look at the English Year Book you will not find a yarn under 40s that is made with two-process drawing."

Mr. Cottingham reported changing a 25,000 spindle mill from two-process to one-process drawing with excellent results. He brought out that in doing so they cut the roll speeds to about 225 r.p.m. and also changed the settings on the slubbers, because the slubber roving was a little more lumpy after going to the one-process.

Harry H. Purvis said that they changed from two-process to one-process several years ago, at the same time taking advantage of the speed, cutting it from around 350 to 210 r.p.m. He said that this runs just as good as with the two-process and that they are now using the one-process. Pat McGarity reported changing from two-process to one-process at two different mills with satisfactory results. He said that they also cut the speed and changed the tension gears on the slubbers.



THERE IS ONE GRADE
-and only one grade-
OF THESE CORK COTS

WITH Armstrong's Seamless Cork Cots, you can be absolutely certain of *uniform* grade, time after time. For the manufacture of these cots is carefully controlled—no guesswork, none of the variations that may occur in unfabricated products of nature. Every Armstrong's Seamless Cork Cot is exactly like every other one.

As a result of this uniformity of cots, you gain important advantages. Greater uniformity of drafting is one. Stronger and evener yarn is another. And there are many more. In addition, it costs less to use cork. For full information, write Armstrong Cork Products Co., Textile Division, 923 Arch Street, Lancaster, Pennsylvania.

Armstrong's
SEAMLESS CORK COTS
for spinning and card room rolls

CURRENT TEXTILE TOPICS ....

Talk of the Month

SIX MONTHS of anxiety and perplexity under the political clouds might be cause for unending despair, but strangely enough the government is starting a program apart from its textile operations which presumably means business indirectly for everybody. The works relief program may be counted a rift in the political clouds overhanging cotton textiles these many moons, because it is confidently felt that the spending of between 4 and 5 billions of dollars will be the stimulus to a large volume of business, what with the new purchasing power added to that existing. Some business people are looking to this program as the source of widespread activity for at least a year ahead.

Potential volume of business a rift in political clouds

In this spending there is the second side of an Administration paradox, the combination of which is mystifying to a large part of the business world. The government is now off on a spending spree to speed the recovery, as it was off on the New Deal two years ago to start the recovery. The emergency measures invoked in 1938 were felt to have merit and the inspiration of a new president with what appeared to be definite ideas for recovery instigated a boom. The frank course of experiment very obviously overreached itself and, after a struggle with private business, some excesses were dropped.

Yet two years after the inauguration, when the recovery should have been showing a healthy absorption of the unemployed back into private industry, reform measures put ahead of economics which business men regarded as the only way of progress kept uncertainty in the air. The Administration was piling up debts and damming up the sources of income to pay them, such as the cotton industry. That was the first side of the paradox. It now remains to be seen how far a vast work relief program in the future can offset the vicissitudes of the past. It is the chief hope of the coming year.

If general business makes the progress anticipated—which obviously is the only salvation for the country under the mounting cost of government and excessive taxation entailed—cotton manufacturers will find the road somewhat smoother. The end of many problems is not in sight, but a sellers' market would relieve the stress of competition while it lasted. The most imperative problems of the past year have been the processing tax, destructive competition from imports and loss of foreign markets. Other matters are internal affairs of the industry and differences which will be slow of reconciliation, but at least the industry has gone ahead under them before in an active market.

Leaving aside the complications on the administrative side of the industry, the cotton industry would have started a month ago in an encouraged frame of mind. The National Cotton Week was a healthy opening, or precursor, of the summer season. Retailers have come to accept this movement as a great booster for their seasonal business. It is opportune as an opener and retailers have come to co-operate handsomely, evenly lavishly, with the program sponsored by the Cotton Textile Institute. Thus cotton manufacturers have developed a plan which has worked out as a most practical annual affair for stimulating public buying of their products.

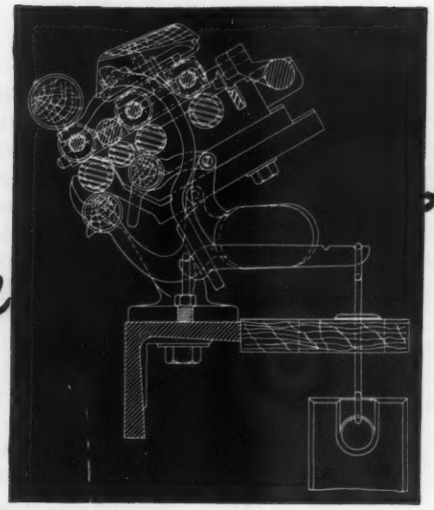
Prices Continue Unprofitable

Under the circumstances, the chief fly in the ointment at the start of the season was the unprofitable level of prices all round. If business now makes real progress, it may be anticipated that the distorted price relationships of cotton to other things will be adjusted. A fundamental defect of the artificial level of cotton (the 16-cent level created by the processing tax) has been to force the manufacturers to operate on a basis of costs consistent with normal, or more normal, purchasing power. The hitch came when mills had to make prices for goods consistent with the prevailing purchasing power, which has been slow to expand in two years—at any rate for the individual, in most cases. Prices have to be made to suit the individual buying power. As pointed out by the New York Cotton Exchange, the index of cotton prices, including the processing tax, in the middle of May was about 93 per cent of the 1926-1929 average, whereas the all-commodity index was around 82 per cent.

Even if cotton should go to the 16-cent level in the open market, without a processing tax, that would not justify the prior imposition of such a levy. The implications of inflation in all business are regarded as indubitable, though just what form that may take is a matter for conjecture. Inflation even of a healthy credit nature alone would naturally be reflected in higher prices for goods and mills would willingly pay more for the raw material. Manufacturers have right along allowed the necessity of relief for distressed farmers, due to ruinously low prices. But they could not remedy the situation in the face of a distressed entire public which could not pay reasonable prices for goods.

Mills hailed the recovery program in 1933 as a step toward return of normal levels for products in general, to come logically through spread of employment, with such impetus as the Administration could give it as a starting point. There have been disappointments. There remain serious conditions for adjustment in the cotton industry. At the same time, manufacturers have something to hope for in the potential broad betterment of business at large during the coming year.

What Price Long Draft?



Perhaps you've heard of the boy who wanted to eliminate school; so he played hooky and hid in the closet at home all day long. By the end of the day he decided he'd paid too big a price for "elimination."

Spinners of cotton yarns are interested in long draft spinning because they want to eliminate operations, time and labor. However, in selecting long draft equipment, they should make sure that, in eliminating, they do not sacrifice the simplicity, cleanliness and low upkeep that are characteristic of regular type spinning frames. They don't want to keep on paying for elimination indefinitely in the form of increased upkeep.

H & B Four Roller Long Draft Spinning offers elimination of operations, time and labor WITHOUT PENALTIES, because, as regards simplicity, it more nearly approaches regular spinning than any other type of long draft equipment.

At the same time it is highly efficient in performing its task. It gives free play to the fibres, so that the longer fibres naturally work toward the core of the yarn, where they make for greater strength, while the shorter fibres work outward. Roller No. 2 performs the same function as do belts in other systems,—it prevents sagging and controls the shorter fibres. At the same time fly (and other waste) has an opportunity to fall clear. It does not bunch up and is not carried into the yarn.

The ultimate result is a strength, evenness and smoothness of product not ordinarily associated with long draft spinning.

Specify H & B Four Roller Long Draft and thus maintain quality and obtain lower costs WITHOUT PENALTIES.

H & B AMERICAN MACHINE COMPANY
Cotton Preparatory and Spinning Machinery
PAWTUCKET, R. I.

BOSTON OFFICE, 161 Devonshire St.; ATLANTA OFFICE, 815 Citizens and Southern National Bank Bldg.

H&B

FOUR ROLLER LONG DRAFT SYSTEM

NEW ENGLAND cotton manufacturers have little opportunity for several months to do anything but work for the salvation of the mills in this district. There have been studies of the situation by many interests and presentation of facts to the Cabinet committee at Washington, as well as to the Tariff Commission in its special investigation for the NRA. The abundance of reports has brought out data on circumstances of sectional and of national application. The social-economic phase of industry, brought into national relief by the course of the Administration in its control measures, has only emphasized the fact that this district long ago concerned itself with welfare of workers—unfortunately too much in the conditions of competition.

New England Mill Situation

This is a fact alike becoming obvious to the friends of labor in this section, as they have seen the destructive effect of restrictive laws upon employment as upon mill investment, and long since became apparent as a warning to other sections of the country. The South, at least in some sections, for many years has been discussing the burden of growing local taxation of various kinds and citing the disastrous experience of Massachusetts. Thus the once sectional problem has been spreading. The present point of the matter is that the social-economic program of the nation has gone a step further in the destructive process: while the NRA code for the cotton textile industry has imposed burdens of higher wages and shorter hours, the AAA has laid a class tax in addition.

In opposing the Administration on this matter, New England mill men, together with political and social groups, have taken a stand for consideration of the whole industry. There are sectional matters in the cotton situation and these have also been put before the Administration for adjustment upon a purely national basis, but the processing tax was first and foremost in the minds of most people in the district. When New England was singled out for attack by Secretary Wallace and others, the issue was misrepresented to appear sectional. The report in May of 17 mills forced to close in Georgia, nearly as many more being about to suspend operations and nearly 30 others curtailing severely, alone was sufficient to discount such a representation.

Through the continued period of uncertainty up to this month surrounding the continuance of the NRA and the bindings of committees investigating the effects of processing taxes and increasing imports upon the industry, the deplorable situation for mills of New England became aggravated. Drastic curtailment beyond that of organized retrenchment under the code has been exercised by outstanding companies. It was estimated some time ago that 18,000 workers had been thrown out of work permanently by mill closings in the district since January 1, 1935. Many more thousands have been added to the list temporarily in this section and mill leaders have cited this fact, together with curtailment elsewhere, as indicating the futility of the government program.

Much satisfaction was derived here from the report of the Cotton Textile Work Assignment Board (see page 66), for eliminating such apprehension as might be held outside the industry over a loading of work upon operatives in excess of their ability to perform it. The various reports of committees investigating labor conditions, wages, etc., for the Administration as a result of the strike last fall have all been interpreted by mill men here as endorsement of their efforts to co-operate with the government in its aim toward betterment of conditions for operatives. As stated by Lincoln Baylies, spokesman for the northern cotton mills' policy committee, "the public interest in the so-called stretch-out system, or 'specialization' as it is known in the industry, has been heightened in the last few months. It is significant that the board found that specialization applied to all industries."

Notwithstanding the vicissitudes of the mills in this district, manufacturers have had some hopes for the coming year from the combination of underlying marketing conditions at the start of the summer season in finished goods. The manufacturers of fine goods cherished no sanguine expectations of volume sales right away. But it was felt that the drastic curtailment of output was making for a sounder market, coupled with the fact that general business promised a betterment that would reach into the field of cotton constructions.

With a healthy start made toward avoidance of burdensome stocks of unfinished goods, the mills have at least one favorable factor toward a good position in the season for fall lines. Buyers have naturally been hesitant to operate far ahead of requirements, but a sellers' market might well develop under a change in the political phase of things, together with the stimulus of the great government spending program. Obviously, however, it is only a sellers' market that will start the mills of New England toward a rehabilitation of their position.

COMMENT ON THE COTTON MARKET

New Orleans, May 15, 1935.

THERE is improvement in the new crop outlook to the west of the Mississippi, due to the coming of much needed rains. Nevertheless, the trend of the cotton market remained upward during the past month, with new crop deliveries ruling the stronger as a result of authorities deciding to release some pool cotton holdings and replace with futures, much of the recent big discount in distant deliveries having about disappeared in consequence.

The recent sharp advance in the value of silver—subsequently checked, at least temporarily—too much rain in the central belt and in parts of the Atlantics, plus the tightness of spots, some improvement of late in the export movement, and the possibility of further inflation contributed to the advance also, as did the more encouraging trade advices from the industrial sections of the country.

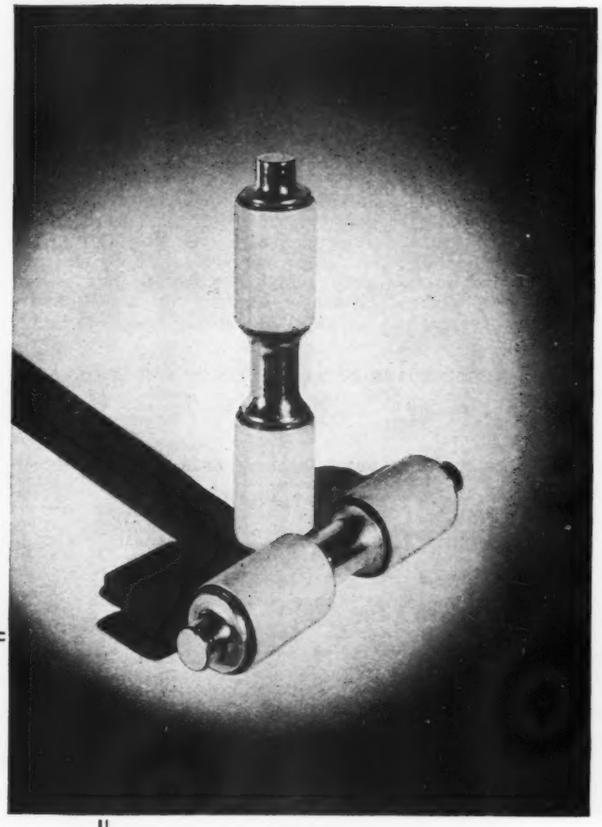
Recently the New York Cotton Exchange Service estimated the world's consumption of cotton for eight months, August 1st to March 31st, as follows:

Bales—	This season	Last season
American	7,683,000	9,424,000
Foreign	9,361,000	7,685,000
All kinds	17,044,000	17,109,000
World's stocks, March 31st, est.		
American	12,537,000	14,902,000
Foreign	9,160,000	9,846,000
All kinds	21,697,000	24,748,000

A Large Southern Mill

writes
regarding

SPINNA CALF



"We are very much pleased with the results obtained in using Chrome Spinna Calf. The number of rollers used has been reduced forty percent, which makes a corresponding saving in dollars. There is also a big improvement in the running of the spinning, as lick ups around the rolls are practically eliminated."

THE name of this mill will be sent upon request . . . . together with further data explaining the unique combination of low cost roller covering with spinning excellence not obtainable with ordinary materials.

SPINNA CALF

A. C. LAWRENCE LEATHER CO.

Specialists in Textile Leathers

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.

Fabric *Quality* begins with the *Yarn*

As to the amount of cotton under government control in the latter part of April, authorities were credited with stating that it consisted of 1,300,000 bales of spots, 300,000 bales of futures and 4,338,000 bales of loan cotton.

Further operations on the part of pool authorities are anticipated. It is rumored there have been heavy bookings recently of freight room for the Far East and Liverpool. Rumor has it that the pool has released 300,000 bales, and expects to release 500,000 to 600,000 bales.

Nevertheless, not much further change in the market is looked for at this time, as values are virtually pegged by the government loan value on American cotton, and unless much of government controlled cotton is retired from the market indefinitely, and unless there be assurance that any loan on the crop now in the making will be at a much lower value or eliminated altogether, the outlook for an active contract market, and for exports, would not seem to be encouraging.

BRITISH BOARD OF TRADE REPORT FOR APRIL

Year—	1935	1934	1933
Exports of yarn, pounds....	10,000,000	11,000,000	9,000,000
Exports of cloth, yards....	159,000,000	154,000,000	171,000,000

U. S. CENSUS REPORT FOR APRIL AND NINE MONTHS

United States— Bales—	This season	Last season
Consumption of lint in Cotton Growing States, April	374,013	406,318
In New England States	68,321	91,008
In All Other States	20,510	15,268
In United States	462,844	512,594
Consumption of lint in Cotton Growing States, 9 months	3,283,801	3,551,011
In New England States	642,655	776,478
In All Other States	170,415	130,252
In United States	4,096,871	4,457,741

AMERICAN COTTON

August 1 to May 10— Bales—	This season	Last season
In sight (marketed)	8,528,000	12,274,000
Exports from U. S., including Canada	4,183,000	6,743,000
Spinners takings, world	8,983,000	12,117,000
Stock at all U. S. ports, May 10	1,869,000	2,935,000

There is the possibility of a scarcity of free cotton, that is cotton not under government control, before the new crop moves, but the shortage, should it occur, would likely be supplied from government pool and loan cotton.

Domestic Cotton Goods Market

Recent advices from New York were to the effect that the textile markets were generally quiet, values were holding pretty steady, and that restricted production is relieving potential market pressure. Government orders are coming along plentifully and are helping to provide work on medium and heavy goods. The prospect that the government will place army and CCC orders early, is expected to take up any summer slack. The expected big increase in employment on government and private projects, it is believed will help general business materially later in the year, which is hopeful.

As to the new crop outlook, private estimates as to this year's acreage, range from about 30,550,000 acres to 32,170,000 acres. Sales of fertilizer tags in twelve Southern States, from August 1 to April 30th, are reported to have been 3,600,485 tons, an increase of 6.7 per cent over the corresponding period of last year, and sales of livestock are said to have been large. Of late there have been much needed rains in Oklahoma and Texas, but too much moisture in the central belt and in parts of the Atlantics. The rains, especially where excessive, have delayed farm work somewhat, in some cases necessitating replanting, but the moisture will likely prove an asset, especially in the Southwest, unless June should prove to be a wet month, in which case the boll weevil, the emergence of which has been light thus far, may give cause for apprehension.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1935	1934	1933	1932	Normal
April	2.61	3.14	1.40	2.50	3.16
Nov. 1 to April 30	14.09	14.92	11.65	18.01	13.36

The near future of the market, although not much change is anticipated, will likely be governed mainly by future pool operations and climatic developments in the cotton region, and, perhaps, by developments in Washington as regards the processing tax and the government's policy in regard to the next crop, particularly as to whether there will be a loan value on same.

What the Southern Mills Are Doing

Lanett Bleachery & Dye Works, Lanett, Ala., are completing a new three-story office and storage building. Offices will be on the ground floor, and will be air conditioned throughout. The building is a steel frame structure, finished with limestone. The second and third stories will be used for storage purposes.

The Spindale, Spencer and Cleghorn Mills, of Spindale and Rutherfordton, N. C., property of the Spencer Corporation, have been sold to B. Frank Dew, representing the noteholders' protective committee, and will be operated as The Spencer Mills, Inc., under the management of Eugene H. Timanus.

Pepperell Manufacturing Co., Lindale, Ga., have installed 35 new Saco-Lowell 40-inch cards in the No. 1 mill, replacing old equipment.

Gossett Mills, Anderson, S. C., are erecting a $50,000 addition which will be used to house the rayon division.

A new Sanforizing machine has been installed by the Gregg Dyeing Company, Graniteville, S. C.

Standard Hosiery Mills, Burlington, N. C., are installing 60 additional Banner and Scott & Williams seamless knitting machines.

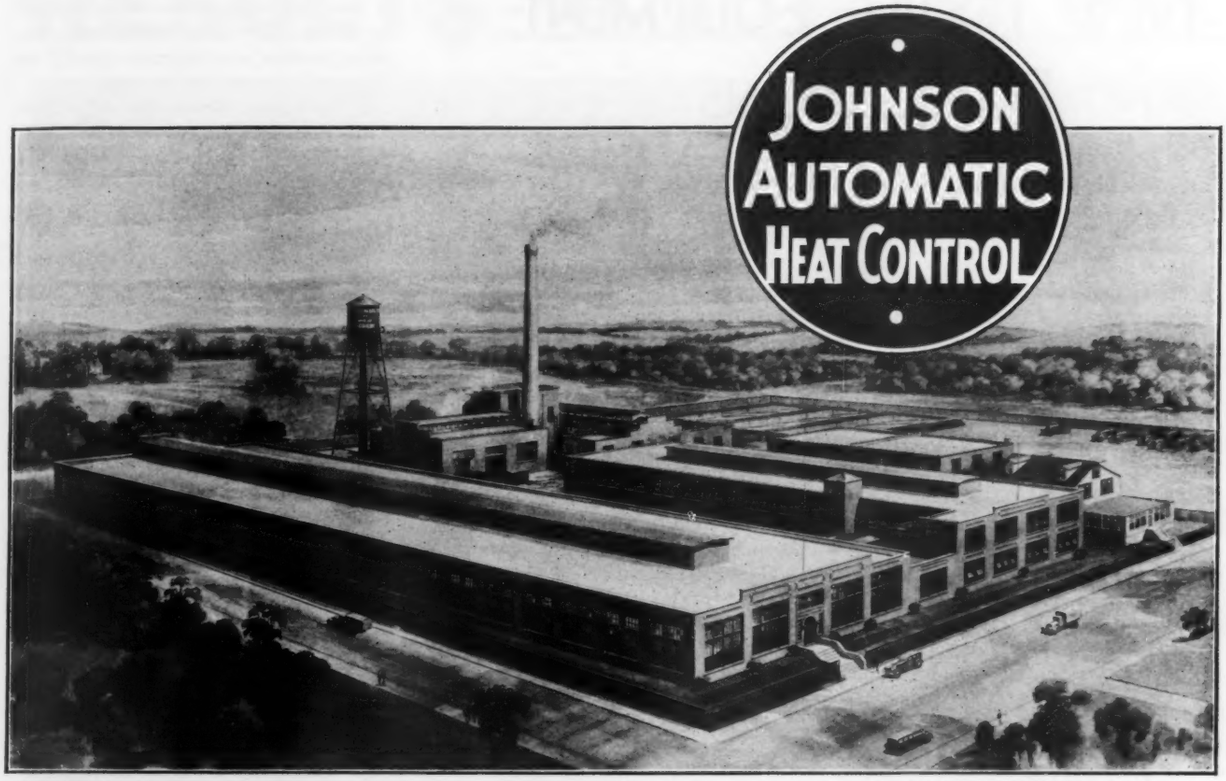
Adrian L. Shuford, Jr., hosiery manufacturer of Conover, N. C., has acquired the Fidelity Hosiery Mills, Newton, N. C.

Pickwick Hosiery Mills, Thomasville, N. C., have been purchased by T. F. Wrenn of High Point. The mill manufactures sports hose.

Jacobs-Spivey Hosiery Mills, Bridgeport, Ala., have been acquired by the Browning Hosiery Mills, Inc., Chattanooga, Tenn.

Southern Silk Mills, Inc., will consolidate all manufacturing operations and executive offices at Kernersville, N. C., according to recent announcement by J. B. Merritt, president. The plant at Greensboro will be closed and the one at Kernersville will be enlarged. The extension will be 60x90 feet, of modern brick construction. C. M. Guest and Sons, Anderson, S. C., are the contractors on the addition, and William C. Holleyman, Jr., of Greensboro, is the architect. W. B. West is vice-president and general manager of the company, and B. L. Clapp is secretary-treasurer. The company produces woven silk satins, taffetas, novelty crepes, rayon and other fabrics.

I. D. Blumenthal, owner of the Buffalo Mill at Stubbs (near Shelby), North Carolina, has announced the termination of the Luther B. Hoad-John Eck management of his mill which they operated for a time as the Esther Yarn Mills. Mr. Hoard and his associates will have no further connection with this mill. Sam Kraft, recently appointed secretary and treasurer of the old Buffalo Mill, will now be in active charge of its operation. According to Mr. Blumenthal of Charlotte, who purchased the Buffalo Mill property about 2½ years ago from the Parker estate of Gastonia, much of the old machinery has already been replaced and additional modernization is planned for the early future.



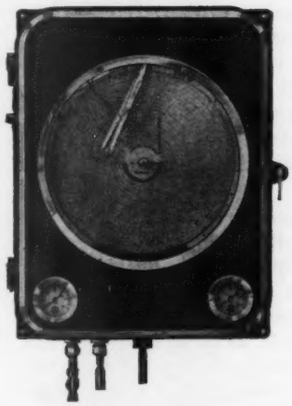
OSCAR NEBEL COMPANY, INC.
Manufacturers of Full Fashioned Silk Hosiery,
HATBORO, PENNSYLVANIA.
Wm. Steele & Sons, Architects, Philadelphia

Room Thermostat (with cover)

Membrane Humidostat (cover removed)

for Space Heating—

Johnson automatic temperature control was installed in the original unit at Hatboro when it was built in 1925, after the Oscar Nebel Company, Inc., had used Johnson apparatus for three years in a plant in Philadelphia. Still later, Johnson thermostats and radiator valves were installed in the addition at Hatboro . . . . . JOHNSON *thermostats* and *humidostats* are effective, accurate temperature and humidity control instruments. They insure just the right conditions for workers, machinery, and products. JOHNSON *metal diaphragm valves* are simple, rugged, fool-proof.



RECORD-O-STAT
Combined controller and recorder.

for Processing—

JOHNSON apparatus includes a wide variety of automatic temperature and humidity control devices for countless applications in all branches of the textile industry . . . . . *Extended tube thermostats,* for wet or dry bulb control from a remote point . . . . . *Insertion thermostats* to sense temperatures through walls or in ducts and tanks . . . . . Room and insertion *humidostats* to regulate relative humidity, with elements so sensitive to moisture that, where required, operation may be had within 1% at 95% saturation! . . . . Direct reading *humidity indicators* with accurate dry-bulb thermometer attached . . . . . Water, steam, and three-way mixing valves . . . . . The "Record-O-Stat," an extended tube thermostat and temperature recorder, combined in one instrument.

JOHNSON equipment is the result of fifty years' experience in just one line of business—the Design, Manufacture and Installation of automatic temperature and humidity control apparatus.

JOHNSON SERVICE COMPANY—Main Office and Factory: Milwaukee Wis.
Branch Offices in Atlanta, Philadelphia, New York, Boston, and other Principal Cities

JOHNSON AUTOMATIC HEAT & HUMIDITY CONTROL

New Textile Equipment and Publications . . .

Automatic Tie-In Head for Abbott Winder

Abbott Machine Company, Wilton, N. H., recently developed, and exhibited for the first time at the textile exposition in Greenville, an automatic tie-in head for their circulating winder. This new development, which takes the form of a semi-automatic operator performing many of the usual hand operations subject to failure by fatigue or carelessness, effects further economies and advantages, the company points out.

The machine employs a magazine or battery in which the bobbins to be wound from are placed in a vertical position. The operator finds the end on the bobbin which is dropped into a circular ring at the center of the magazine. A light suction holds the ends and allows these to be turned like the spokes of a wheel with the bobbins. The ends progressively fall into one side of the knotter to be tied. The end of the package is found by suction behind a small roll which revolves the package in the right direction to pick up the end. As the end works to the end of the suction groove, it enters a slit that is continued in a semi-circular tube over the top of the package. This tube terminates in the suction opening at the center of the bobbin magazine. The rush of air from the suction tube whips the end over into the other opening of the knotter. This operation is so rapid that it cannot be followed by the eye. When the ends of the threads are in place, the knotting mechanism unites them, making standard weaver's knot or the so-called "fisherman's" knot, introduced as a practical knot for the first time.

With the knot tied, the bobbin is dropped through a trap onto a chute that directs it accurately onto the bobbin peg. Any slack is taken up at this point by a mechanism that at the same time acts as a sizing gauge. When the proper diameter is reached, a signal horn is blown to warn the operator to doff off the package. This operation is performed without interrupting the working of the magazine, which meanwhile gives ample reserve capacity. Further movement of the machine starts the winding operation.

The new automatic tie-in head as now applied to the Abbott circulating spindle winder . . .

The new mechanism can be applied to any standard Abbott winder. The traveling head principle, an exclusive feature of all Abbott winders, is still used as the mechanical basis of the new machine. All work incoming and outgoing is handled at one point. The operator can stand or sit in one position, and her work is confined to keeping the hopper filled and doffing as indicated by a signal.

The new machine has an automatic bobbin sorter, which, placed after the run-out point of the bobbins, dumps the empty and partly run-out bobbins into separate compartments. Where a single machine or a battery of machines is used, the empties can be carried off by a conveyor belt. The partly-run-down bobbins are returned directly to the supply hopper for re-tieing.

L. S. Ligon, Greenville, S. C., is southern representative of Abbott Machine Company, manufacturers of this equipment.

New Shear

Curtis & Marble Machine Co., Worcester, Mass., have developed a new shear, for removing the surface and selvage threads from cotton, rayon and similar goods. The company states that in the design of this shear, simplicity, convenience of operation, and economy of floor space were striven for. In it, the cloth passes through in practically a straight line at all times.

The shear revolvers are individually motor-driven. When a seam or foreign substance comes along the shear revolvers instantly reverse and continue to run in the opposite direction until the seam has passed through, preventing anything catching in the blades, by being rejected by the shear revolver running in the opposite direction. When the seam has passed through, the shear revolvers run in their original cutting direction; this change of direction being accomplished without jar or vibration. The straight cloth line, it is pointed out, results in less tension on the goods; the new reversing feature preventing cutting of goods at the seam.

New shear

New Pressure Fire Extinguisher

A new 2-quart vaporizing liquid fire extinguisher that is discharged by air pressure and delivers a fan-shaped spray as well as a solid stream has been announced by Pyrene Manufacturing Co., Newark, N. J. This extinguisher is designed for incipient fires in all classes of material, and especially for inflammable liquids and electrical fires. It is constructed throughout of copper and brass. The discharge nozzle produces a solid stream when opened wide, and a fan-shaped spray when partially open.

RESULTS—THAT ASSURE TOP PRICES

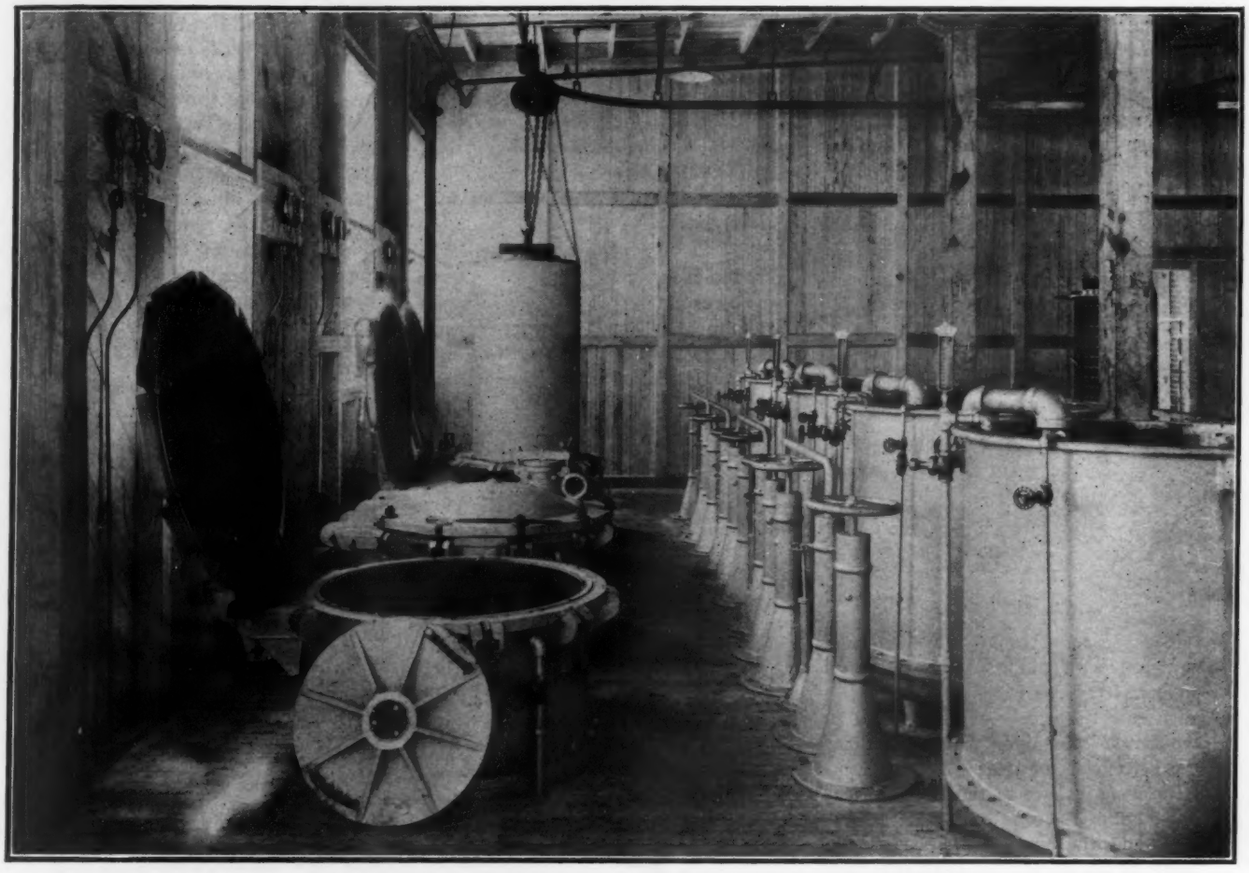


PHOTO SHOWS INSTALLATION IN LEADING TEXTILE MILL

Monel Woven Wire Cloth Dyeing Beam

THE GASTON COUNTY COMBINATION ROVING AND YARN DYEING MACHINE

has received the enthusiastic approval of dye plants everywhere mainly because it produces the RESULTS in quality and beauty of dyeing that make for top-priced products. In addition, this machine effects great savings in material and time. It can be readily understood why so many dyers are specifying it when modernizing their dyeing equipment.

This machine is a true interpretation of the needs of the industry and is backed by 15 years of development and specialization in dyeing machinery. It dyes roving and yarn packages and beams, in the same machine, effecting wonderful economy, especially when running sample or small orders as compared to running them from dyed raw stock. It makes possible new novelty color combinations in spinning.

May we send you full details on this machine and how it can modernize your dye plant on a sound basis of continued economy and efficiency. No obligation. Just drop us a line today.

Roving and Yarn Package Container

GASTON COUNTY DYEING MACHINE CO.

Address all correspondence to main office:

STANLEY, NORTH CAROLINA

INVENTORS AND MANUFACTURERS OF: Beams and Machines for Beam Drying, Beam Winding, Beam Dyeing, Package Drying, Bleaching on Beams and Packages, Roving Dyeing, Roving Drying and Vacuum Extracting Machines

The "Roto-Koner"

By the application of "stream-lining", The Universal Winding Company, Boston, Mass., have designed their new No. 44 Winder—the "Roto-Koner"—so that places where lint would tend to accumulate have been eliminated; and the company points out that this refinement means there are no parts of the machine hard to clean, no surfaces where yarn will touch and carry lint

Close-up of the "Roto-koner"

into the cone. All "Roto-Koners" are equipped with the Universal patented rotating traverse rolls, which roll the yarn onto the cone without rubbing it, tending to eliminate "whiskers" along the bottom of the cone. The acceleration of the groove in the rotating traverse builds the cones faster at the bottom, and the taper increases as the package builds up; so that the yarn will not drag over the surface when feeding the knitting machine. All cams and reciprocating parts are eliminated in this machine, reducing clatter and noise and worker fatigue, and reducing oiling. A splash system of oiling gives automatic lubrication to the major moving parts of the equipment. "Press button" control is used to enable the operator to start cones easily, and stopping is accomplished automatically with "feather-touch" control. All the way down the line emphasis has been placed on speeding up and improving the operation and the resulting cones.

Power Costs Important Factor in Shearing

Hermas Machine Company, Hawthorne, N. J., recently distributed to textile mills a bulletin pointing out that the most important single element in the operating cost of machine shearing for cleaning hanging ends from the selvages and face of woven goods is power consumption. The bulletin states that it is quite possible for so much current to be employed through the unnecessary use of motors that all the economies effected through machine shearing are nullified by the cost of extra power consumption.

Pamphlet on Slashol

Wm. C. Robinson & Son Co., Baltimore, Maryland, with southern office and warehouse at Charlotte, N. C., have distributed a pamphlet descriptive of their product Slashol, which is described as a light colored liquid oil, neutral and hygroscopic, especially designed for sizing, to replace beef tallow for size.

25-Pound Electric Powergun

Alemite Division, Stewart-Warner Corp., 1826 Diversey Parkway, Chicago, Ill., have developed a new 25-pound capacity, electric powergun for lubrication in textile plants where electrical equipment is particularly desired. It is operated by a rugged, heavy duty universal motor on either a.c. or d.c. current, and is easily operated by one-

New portable powergun

hand manipulation of the control valve. An adequate pressure is available to deliver either a steady stream of 12 ounces of lubricant per minute or single shots as desired. There is a supply of adapters to provide contact to hydraulic, push-type and pin type fittings. This powergun, which has a chip-proof maroon finish, may be moved about on three large rubber casters, and is provided with a rack to keep the hose and electric cord off the floor. The company also provides a 25-pound gun operated by air pressure.

Plibrico Handles Beco-Turner Line of Baffle Walls

The Boiler Engineering Co., Newark, N. J., former builders of the Beco-Turner baffle walls for water tube boilers, have discontinued business, and these products are now being installed by Plibrico Jointless Firebrick Co., 1800 Kingsbury St., Chicago, Ill., which have added the engineering and installation personnel of the Boiler Engineering Co., to their own boiler setting department.

Self-Aligning Belt Conveyor Idler

Link-Belt Company, Indianapolis, Ind., have announced a new self-aligning anti-friction idler for troughed conveyor belts, which is made up of standard belt carrying rolls mounted in a supporting frame provided with arms extending parallel with and at the sides of the belt, on which "actuating rolls" are mounted for the purpose of swiveling the idler frame promptly when the crooked running belt crowds sidewise enough to engage either of them. This troughing idler frame is supported by an anti-friction pivotal bearing, carried on a cross-member or sub-frame bolted to the conveyor stringers.

Double Strength Steel

Republic Steel Corp., Youngstown, Ohio, have announced Republic double strength steel, a new high tensile steel product, which is a copper-nickel-molybdenum ferrous alloy with yield point and tensile strength sufficiently higher than ordinary carbon steel to permit the use of 30 to 40 per cent lighter sections without sacrifice of strength or safety factor, it is pointed out. It is made in two carbon ranges and is available in the usual commercial forms. It can be arc, gas or spot welded without loss of ductility at or adjacent to the weld, the company states.

Nine New Rotalin Colors

The dyestuffs division of E. I. du Pont de Nemours & Co., Wilmington, Del., have announced the addition of nine new Rotalin colors, and a new waterproofing agent known as Aridex WP. The new Rotalin Supra colors are: Rotalin Yellow G Supra; Rotalin Orange R Supra; Rotalin Chocolate Supra; Rotalin Red S Concentrated Supra; Rotalin Violet Concentrated Supra; Rotalin Blue B Concentrated Supra; Rotalin Brilliant Blue 2B Concentrated Supra; Rotalin Green Y Concentrated Supra; and Rotalin Black RM Supra. "Rotalin" is a registered trade-mark of the du Pont company. These colors have been added to the line of printing ink colors to fill the need for tinctorially strong colors to produce smooth even prints of good fastness to water, rubbing, oils and hot waxing, it is explained.

Aridex WP, the new waterproofing agent, is intended for producing a water repellent finish on textiles of all kinds as well as on leather and paper. It is offered especially for the spot-proofing of rayon and silk crepes, pile fabrics, hosiery, etc., and is said to be especially suitable for waterproofing umbrella cloth, shower bath curtains.

SKF *Dependability Assures*

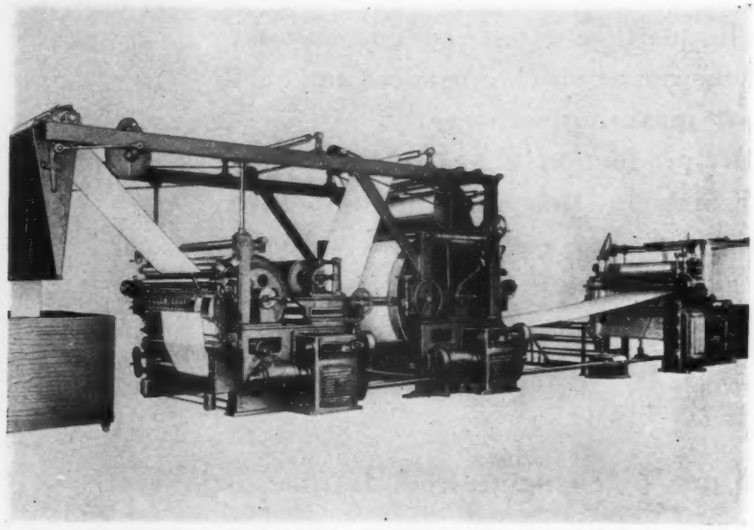
CLEAN PRODUCT

From Finishing Machinery

● SKF makes practically *all types of anti-friction bearings.* When SKF recommends a particular type of bearing, therefore, you may depend upon it; its recommendations are *unbiased!*

SKF

BALL AND ROLLER BEARINGS 3405



SKF-EQUIPPED—BUILT BY THE TEXTILE-FINISHING MACH'Y CO.

When SKF Bearings start to rolling in this No. 494 Standard Modified Sanforizing Machine with Auxiliary or Reverse Finishing Unit, they provide and maintain clean, dependable operation for accurately controlled and predetermined shrinkage of textile fabrics.

They're one of the reasons for continuous good performance of the entering and feed rolls, Palmer, idler rolls, compensator, Reverse Finishing Palmer, main drive, side shaft drive and gear boxes in this application. Their ability to keep oil spots from damaging product and to remove fire danger is recognized throughout the textile industry. They run freely under cloth-drag . . . never need adjustments . . . and they minimize power and lubricant consumption in long, trouble-free service. Why, then, prefer anything less than SKF?

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

As Good as Getting from Looms

Reading time, 38 seconds

Here's how one mill figured it out. They ran a test of leather vs. Goodrich Rubber Belts. Because the Goodrich Belts neither stretched nor shrank, looms ran at maximum speed and held that maximum constantly. As a result, production increased about 4% —which in this mill amounted to 5,190,400 more picks per day. To get that many additional picks, with the leather belt this mill had been using, they would have had to buy 68 additional looms.

So just by changing from leather to Goodrich Rubber Belts, this mill gets the equivalent of production from 68 looms that they never bought.

You can do the same. Goodrich Belting can be conditioned to the atmosphere of your plant and when properly applied in this way, it always increases production, prolongs life of the drives, improves uniformity and quality of your product.

More product, better product, lower cost! Isn't that worth investigating? Call your Goodrich Distributor or write The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.

Saco-Lowell Spinning Frame, 4 inch Gauge—operating in 63% relative humidity and an average room temperature of 80° F.

GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:

- *Transmission Belting*
- *Spinner Belting*
- *Special Belt for moist atmosphere*
- *Multiple V-Belts*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

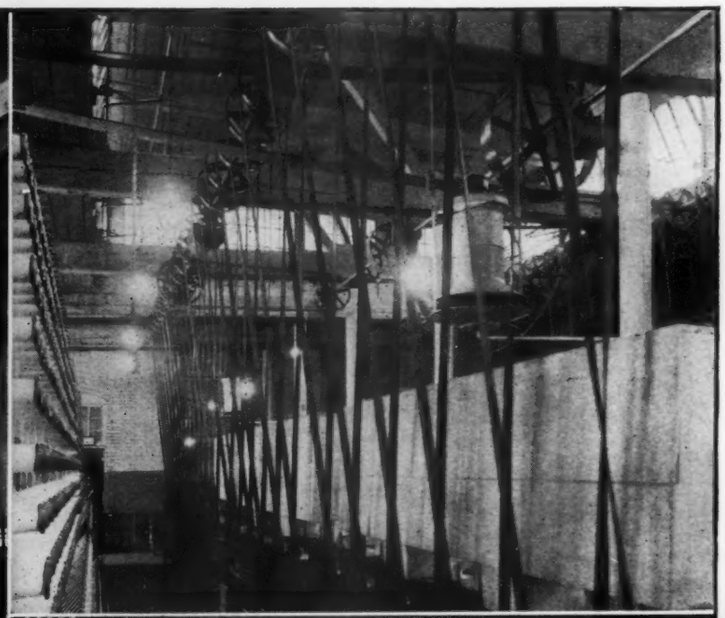
ALL *products problems* IN RUBBER

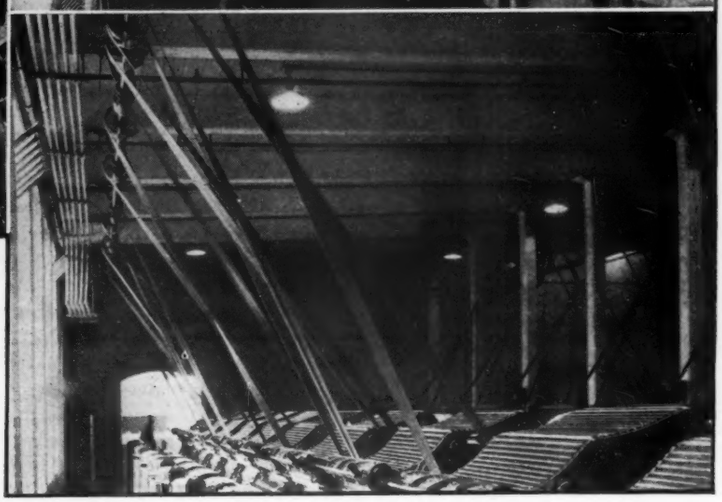
Goodrich

PRODUCTION
you don't own

Universal Winder Drive—equipped with 1½ inch, 4 ply Highflex Junior Belting. Distance between shaft centers, 12 feet.

Whitin Model E Full Roller Top Waste Card—showing main cylinder and stripper roll drives equipped with Highflex Jr.





Highflex Jr. endless belts on Saco-Pettee Card—Main Cylinder Drive. Despite constant rubbing where the belts cross, the vulcanized splice has added many months of life to these belts.

Highflex Jr. Belting

tenting or awning fabrics and heavy materials such as drills and twills for over garments.

Lixate Process for Brine for Dyeing

International Salt Company, Inc., Scranton, Pa., have applied the Lixate process of producing brine for use in textiles, in, among other applications, dyeing. The following extract is taken from a publication of the company, describing this application: "Brine is extensively used in the dyeing industry as an exhausting agent to help in depositing the dye in the fibers of thread or cloth. Such brine must obviously be pure—not only clear and free from insolubles, but uniform in concentration so that it will not cause uneven color in the finished work. Dyes are as a rule soluble in water, and are applied in aqueous solution. 'Hard' water contains compounds that combine with

—for making brine for dyeing

dyes to form insoluble substances. Since dyes must be in solution to penetrate the fabric, any portion of the dye that becomes insoluble is lost. Sometimes the insoluble dyes formed by hard water cling to the fabric and make undesirable spots." The booklet points out that dyers have found a number of economies resulting from the use of Lixate brine, which is made from economical grades of rock salt, instead of evaporated salt or Glauber's salt. Lixate brine, it is pointed out, eliminates the weighing of salt to arrive at the estimated strength of brine in the dyebath, producing more uniform results, since it is easier to measure a brine of known density than to estimate the right amount of salt to be added to the bath.

The Lixate process is an automatic method of producing a pure, clear, uniformly saturated brine from rock salt; it combines a method of dissolving without agitation, and a method of self-filtration. The entire operation takes place within a dissolver. For continuous salt supply, a self-feeding hopper is installed above the unit, and a tank for storing brine is also necessary. An installation of equipment for producing Lixate brine for dyeing and processing textiles, at the Waldensian Hosiery Mills, Inc., Valdese, N. C., is shown in the accompanying photograph. Robert V. Irwin, Box 724, Charlotte, N. C., is southern representative of the International Salt Company, Inc.

Circular on Textile Accessories

The Gates Rubber Company, Denver, Col., have prepared and are distributing a new circular "Gates Textile Accessories, Made of Cotton for Cotton Mill Use", describing the company's line of cone belts, evener belts, card bands and loom binder cushions, with detailed specifications.

New Direct Beam Warper

Sipp-Eastwood Corporation, Paterson, N. J., have developed a new beam warper, direct driven from the beam head, for synthetic yarns and fine count cottons. This drive eliminates the large presser roll, it is explained, and permits efficient braking without strain on the yarn. The brake will stop the warper in 1¼ feet from high speed, it is stated. A multiple disc clutch and an automatic movable reed are other special features.

Alemite Service Equipment Catalog

Alemite Corporation, Division of Stewart-Warner Corp., 1826 Diversey Parkway, Chicago, Ill., have prepared and are distributing a 24-page book showing the complete line of new Alemite lubricating equipment, with various parts and accessories, for every kind of lubricating job. Equipment is shown in natural colors, fully described, with all prices quoted.

Goodrich Vulcalock Valves

The B. F. Goodrich Co., mechanical division, Akron, Ohio, have developed Vulcalock valves, which are rubber lined, and of simple design, for handling corrosive and abrasive fluids under conditions of fairly high pressure, pulsating pressure, throttling or suction. The action of the valve does not depend upon a flexible diaphragm, it is explained; the resilient, rounded disc which snaps over a circular plate at the lower end of the stem provides an absolute seal when brought into contact with the molded rubber-covered seat rings. The valves may be lined with any of the standard Goodrich Acidseal compounds, hard or soft, this lining being bonded to the metal parts with practically integral adhesion, and corrosive or abrasive materials handled come in contact only with rubber especially designed to resist their deteriorating action.

Stainless Steel Textile Folder

Republic Steel Corporation, Massillon, Ohio, have prepared and have for distribution a booklet entitled "Enduro Stainless Steel Textile Folder", which explains the applications of Enduro stainless steel for textile equipment. An interesting feature of the folder is a series of actual color illustrations of yarn samples dyed in acid colors and in acid chrome colors, showing how Enduro stainless steel holds the true color of the dye. Illustrations of applications, including dye kettles, dye racks and sticks, perforated cylinders for rotary dyeing machines, yarn boxes, etc., are shown.

Heddle for Weaving Cellophane

Steel Heddle Mfg. Co., Philadelphia, Pa., Greenville, S. C., and Montreal, Canada, have developed a novel and practical heddle for weaving cellophane transparent film, which carries an especially designed, square or oblong super-finished eye, for weaving this slit film yarn, which is most sensitive to any roughness or improper construction. The correct spacing—the formation of the center eye with sufficient play of the heddle—was an item carefully considered in the design of this new heddle.

Valve for Corrosive Service

The Lunkenheimer Company, Cincinnati, Ohio, have developed a new "Causul" metal valve for chemical and industrial processes involving corrosion resistance problems. "Causul" metal, it is explained, is an austenitic ferrous alloy, particularly resistant to corrosion. In addition to gate valves in screwed and flanged patterns, the line includes a "Causul" metal indicator cock with diamond shape port for acid sludge and oil burner service.

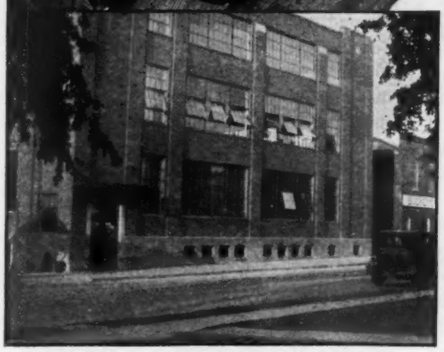
Booklet on Lift Trucks

"This New Industrial Pick-up" is the title of a new booklet just issued by The Elwell-Parker Electric Company, Cleveland, Ohio, describing the company's service to industry in providing for the handling of industrial loads on "pallets" with tiering fork electric trucks to carry them. The booklet describes a wide range of applications of this principle of conveying and storing products, supplies, etc., by tiering and storing on these pallets.

"OVER-ALL" *in any* SEWING ROOM

UNION SPECIAL

Sewing Machines



THE BUCKEYE OVERALL COMPANY

The Buckeye Overall Co., Versailles, Ohio, operates plants at Versailles (pictured above) and at Coldwater, Ohio, also a subsidiary company at Greenville, Ohio. Its production of overalls, play suits and work pants ranks it right among the leaders in its line. This company has been a steady user of Union Special machines in large numbers, including the latest type—the LOCKSTITCH machine.

WHETHER you make overalls, dress shirts, men's clothing or ladies' underwear—wherever sewing is required—the Union Special line of sewing machines tops the field for production speed and uniform high quality of seam.

There's a Union Special for your requirements—making either the double lock or the lockstitch seam—with speed and feed designed to meet your particular needs.

And there's a Union Special representative with long experience in sewing room problems waiting to discuss your machine requirements with you. May we have him call?

UNION SPECIAL MACHINE COMPANY

400 N. Franklin Street, Chicago, Illinois

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Open Atlanta Office

The Brown Instrument Company, Philadelphia, Pa., manufacturers of instruments and controls, and the Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., manufacturers of control systems and regulators, have opened a joint office at 303, 101 Marietta Building, Atlanta, Ga., to serve the Southeast. Wesley R. Moore, for a number of years district manager of Brown Instrument Company, is manager in charge, with Leon L. Kuempel, sales engineer, Charles A. Kitzjinger, service engineer, and J. A. Crawley, office manager. A stock of Minneapolis-Honeywell products is carried, and complete sales and installation service maintained at this office for the complete lines of both companies.

Sons Continue Birch Business

The business of Birch Brothers, Inc., Somerville, Mass., conducted by Albert Birch for the manufacture and sale of textile dyeing and finishing machinery and mill sewing machines for the cotton, rayon, woolen and worsted, and pile fabric trades, will be continued by his three sons who have been associated with him in its conduct for many years. The business was established in 1883 as Birch Brothers, and has been located in Somerville since 1889. It was incorporated in 1932 with Albert Birch as manager until his death in March of this year. The business will continue with Clifford W. Birch as president, Stanley W. Birch, vice-president, and Hafold W. Birch, treasurer.

Represents Link-Belt at Dallas

R. Y. MacIntyre, who has been the representative of Link-Belt Company at Memphis, Tenn., since 1932, has been transferred to the company's district sales office and warehouse in Dallas, Texas, where he is now assisting E. G. Wendell, the local manager.

O'Leary Advanced by Lukens

A. J. O'Leary has been appointed assistant to general manager of sales at Lukens Steel Company, Coatesville, Pa. Prior to joining the Lukens organization in 1916, he was with the Pennsylvania Railroad and Alan Wood Steel Company. He spent five years in the mills and mill service departments at Lukens before he was transferred to the sales department, where he has served since 1931.

Brinton Moves N. Y. Office

The New York office of H. Brinton Co., Philadelphia, has been moved from 366 Broadway to the Wilson Building, 1270 Broadway, corner 33rd St. and Broadway, Room 607, New York City. J. R. Forrest is the company's New York representative.

Sipp-Eastwood Appoints Mexican Representative

Sipp-Eastwood Corporation, Paterson, N. J., have announced the appointment of Proveedores Textiles, Mexico City, D. F., as their exclusive representative for Mexico.

March Hosiery Shipments Top Production by 76,000

American hosiery manufacturers produced 9,692,000 dozen pairs of hosiery during March of this year, according to the monthly Statistical Bulletin of the Hosiery Code Authority, mailed to the industry in May. This production represents a five per cent increase over February, when production was 9,214,000 dozen pairs, but is lower than that for the corresponding month of last year when 10,471,000 dozen pairs were produced. Excess of March production over February production this year was only one-third the increase shown for the corresponding period last year.

Shipments of hosiery during the month amounted to 9,768,000 dozen pairs, the excess of shipments over production appearing entirely in the field of seamless hosiery. This shipment figure is a gain of twelve per cent over February when shipments were 8,732,000 dozen pairs, but again falls below March of last year when shipments were 10,488,000 dozen pairs. This excess of shipments over production, which was particularly noticeable in the cases of infants' goods, children's ⅝ flat and ⅞, boys' golf hose and anklets, is regarded by the Code Authority as seasonal.

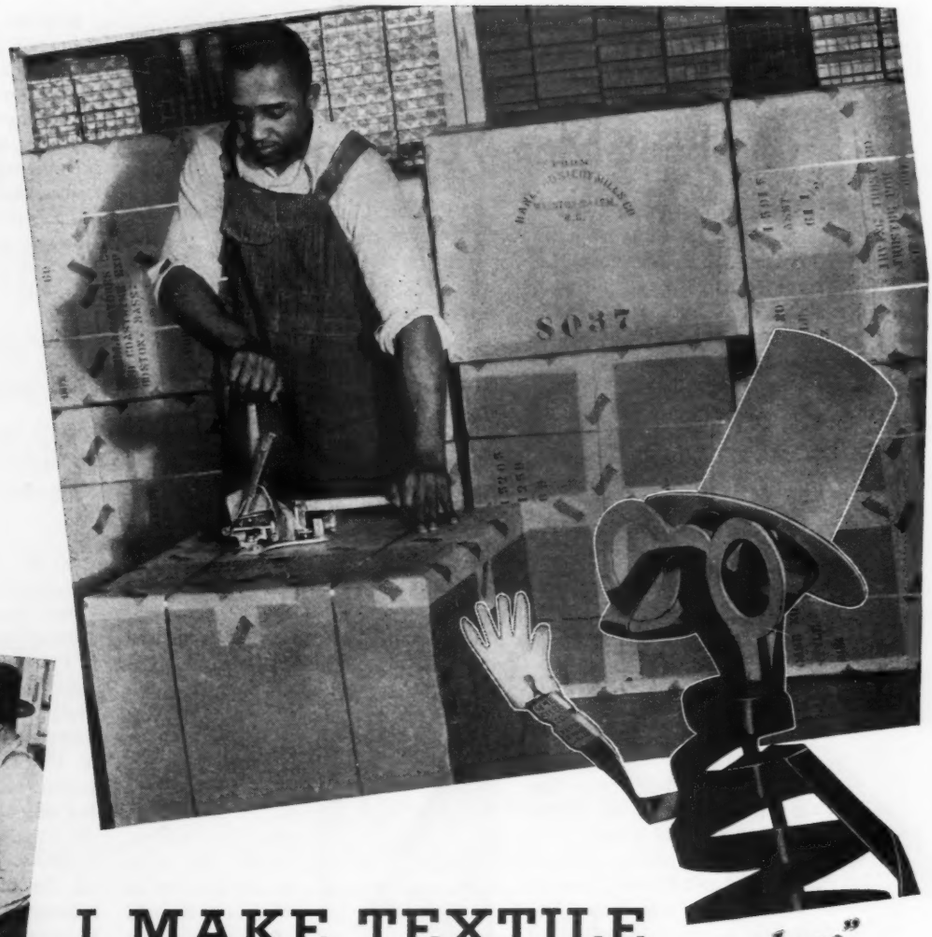
As a result of the excess of shipments over production, stocks on hand at the end of March, amounting to 18,749,000 dozen pairs, were 76,000 lower than they were at the beginning of the month. The decline in stocks was evident in men's and women's seamless rayon goods, infants' goods, boys' golf hose and anklets. Stocks on hand at the end of March last year were 17,571,000 dozen pairs.

For the first time since the Code Authority has been publishing its Statistical Bulletins, comparative figures are given for comparable quarter-year periods. Total production for the first quarter of the current year is shown as 28,900,000 dozen pairs, exceeding the corresponding period of last year by 2,000,000 dozen pairs. Shipments for the quarter, on the other hand, amounting to 27,100,000 dozen pairs, exceeded shipments for the similar period a year ago by 1,500,000 dozen pairs. In both periods, shipments were below production, a notable exception being evident this year in the case of anklets.

The rate of turnover remains approximately once every sixty days for the industry. A rapid rate of turnover is noticed in the case of women's full-fashioned hosiery which turned over 7.4 times during the twelve months ended March 31. Men's rayon half hose, men's cotton half hose, children's ⅝ flat and ⅞, and boys' golf hose also show a higher rate of turnover than the average.

Because rates of turnover computed on a twelve month basis do not show a sufficiently sensitive reaction to seasonal trends, tables are added to the current bulletin showing turnover rates for the six month period ended March 1935 as compared with the corresponding six month period ended March 1934. These tables reveal that the turnover for the six months ended March this year is noticeably higher than for the corresponding period a year ago. For the industry as a whole the rate was 3 times as compared with 2.9 times a year ago. This is largely attributable to the full-fashioned branch of the industry where the rate this year was 4.3 times as compared with 3.4 times a year ago.

Another innovation in the Bulletin covering March statistics is the inclusion of a table showing production of knee-length hosiery during the month. This is based on data received from 62 companies, of which 37 were full-fashioned manufacturers, and the balance seamless manufacturers. Total production in this category amounted to 223,000 dozen pairs during the month. Of this amount 129,000 dozen pairs were full-fashioned, amounting to about four per cent of the total production of women's full-fashioned hose during the month, and the balance was seamless, accounting for about nine per cent of the total production of women's and misses' seamless hosiery.



Faster work, stronger bales, better looking bales, with Acme Bale Ties and Seals.

I MAKE TEXTILE SHIPMENTS "Bound to get there" ECONOMICALLY

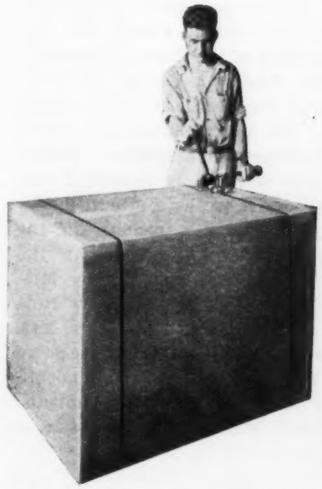
All you folks shipping textiles—whether in bales, cases, or what not—can save some money! That is, if you're not already using Acme Steelstrap. Hundreds of mills have been using this reinforcing band for years.

Scientifically administered, Acme Steelstrap permits the use of lighter "packages" without sacrificing strength. Closure of packages can be speeded up, better looking shipments obtained.

And now, I'm wrapping Steelstrap in a patented, waterproof package called "Acme Annular Wrap"—so that it reaches you perfectly clean. Soiling of products is avoided.

Write me about your shipping packages. I'll be pleased to send you tools, seals and strap for trial. I can show you the way to make your products "Bound to get there" economically.

Doc. Steelstrap



Corrugated boxes are made snug and strong—to carry as much as 200 pounds of textiles—with Acme Steelstrap. Wood cases, too, are benefited by my Steelstrap treatments.

Acme Steelstraps

ACME STEEL COMPANY · GENERAL OFFICES: 2847 ARCHER AVE., CHICAGO

ATLANTA · NEW ORLEANS · SAN FRANCISCO · BOSTON · BROOKLYN

PERSONAL NOTES
about Men You Know

R. BIGHAM SMITH and FRITZ ZWEIFEL have recently joined the southern sales organization of H. & B. American Machine Co., of Pawtucket, R. I., with southern office at Atlanta, Ga., according to announcement by J. CARLILE MARTIN, southern representative of the company. Mr. Zweifel has for a number of years been associated with the engineering department of SKF Industries, Inc., giving especial attention to the development and application of the SKF roller bearing spindle, and is widely known among the textile mills. Mr. Smith also has a wide acquaintance throughout the textile South. He started his textile experience with the Bibb Manufacturing Company, was later with the Borne, Scrymser Company and Seydel-Woolley Company, and more recently has been sales agent for Bowers & Barksdale, Atlanta, handling the "Twist-setter" equipment for conditioning filling.

Mr. Smith

Mr. Zweifel

J. B. FRIERSON, JR., vice-president of the Dixie Mercerizing Company, Chattanooga, Tenn., is receiving the congratulations of his friends upon the arrival, in April, of J. B. FRIERSON, III.

HUGH S. CLARKE, who has been superintendent of the Texas Textile Mills, Waco, Texas, has accepted the position of manager at the Stonewall Cotton Mills, Stonewall, Miss.

J. V. MCCOMBS, formerly superintendent of the Randolph Mills, Inc., Franklinville, N. C., has become superintendent of the Pilot Mills Co., Raleigh, N. C.

J. R. DONALDSON, formerly superintendent of the Monroe Cotton Mills, Monroe, Ga., is now superintendent of the Conestee Mills, Conestee, S. C.

F. GORDON COBB, who has been acting temporarily as assistant to the president at Pomona Mfg. Company, Greensboro, N. C., was at a recent directors' meeting elected active vice-president; M. A. BEARDEN was made assistant vice-president and office manager, and W. L. CLEMENT was made superintendent and assistant manager.

GEORGE D. SIMPKINS has become superintendent of the Cherokee Spinning Company, Knoxville, Tenn. Mr. Simpkins had been connected with the Collins Manufacturing Company until that plant was closed down recently.

ROBERT J. (BOB) FREITAG, treasurer and secretary of the Steel Heddle Manufacturing Co., Philadelphia, is celebrating his 25th anniversary of service as an official of that company. Mr. Freitag, a graduate of the textile school of Zurich, Switzerland, came to this country in 1898 to engage in silk manufacture in Philadelphia, and was one of the first users of the flat steel heddle, then in its infancy. In 1910 he became secretary of the Steel Heddle Manufacturing Company, upon the death of WILLIAM FEHR, one of the founders of the company; and was appointed treasurer in 1912, upon the death of ALBERT HELLWIG, president and treasurer.

Mr. Freitag

During Mr. Freitag's 25 years of service he has seen the company grow to become the world's largest manufacturer of loom harness equipment, with plants in Philadelphia, Greenville, S. C., and Montreal, Canada, and numerous domestic and foreign branches. A banquet was given him recently by the directors of the company, at the Penn Athletic Club in Philadelphia, at which he and Mrs. Freitag were presented with a beautiful silver service in commemoration of his silver anniversary with the organization.

JOHN T. FERGUSON, of Albany, Ga., has joined the southern sales organization of Borne, Scrymser Company, to travel Georgia, Alabama and Tennessee. He is a textile graduate of Georgia Tech, class of 1934.

HOWARD R. WHITEHEAD, agent of the Pepperell Mfg. Co., Biddeford, Maine, has been assigned to a special position as adviser to the president, RUSSELL H. LEONARD. D. SINGLETON COOK is now serving as acting agent temporarily succeeding Mr. Whitehead. Mr. Cook, who has been manager of the mill department in the New York sales office of the company, was previously agent of the company's plant at Opelika, Ala.

W. B. WARD has succeeded J. V. McCOMBS as superintendent of the Randolph Mills, Inc., Franklinville, N. C.

A. H. GOODMAN has become overseer of carding at the Virginia Cotton Mills, Swepsonville, N. C.

Obituary

S. B. (SYD) ALEXANDER, southern manager for Crompton & Knowles Loom Works, passed away early on Monday morning, May 6, at his home in Charlotte, N. C., at 58 years of age, following an extended period of ill health, due to heart trouble. Mr. Alexander, a native of Charlotte, attended N. C. State College, and entered the textile machinery industry upon leaving school, being first associated with the Chadwick interests and with O. A. ROBBINS. He later became a member of the firm of Alexander & Garsed, representatives of Crompton & Knowles, subsequently purchasing the Garsed interests. He had been for years a director of the Crompton & Knowles company. He had represented the company in the South for more than 25 years. Mr. Alexander served his alma mater for years as a member of the board of trustees, and later as a member of the executive committee of the board of the consolidated university system, and served a term as president of the general alumni association. He was a member of the Charlotte Country Club, the American Cotton Manufacturers and the Southern Textile Associations. He offered annually a medal to the member of the Southern Textile Association selected as rendering outstanding service to the southern textile industry. He was a member of the First Presbyterian Church of Charlotte.

Mr. Alexander is survived by Mrs. Alexander, the former Miss Mary Robertson, of Charlotte, one daughter, Mrs. Billy Shaw Howell, of Charlotte; two sisters, one brother and two grandchildren. Funeral services were conducted on Tuesday, May 7, from the home in Charlotte.

WILLIAM E. MITCHELL, vice-president of Ciba Co., Inc., passed away on Thursday, May 2, following an extended illness.

THE USE OF MANUALLY OPERATED SPOOLING OR WINDING SYSTEMS CANNOT REDUCE COSTS AS CLAIMED

• The work required of Spooler operators is essentially the same with any spooling system which depends on the use of hand knotters. Unless there is an increase in the number of bobbins that can be handled per operator, there can be no worthwhile reduction in the cost of spooling.

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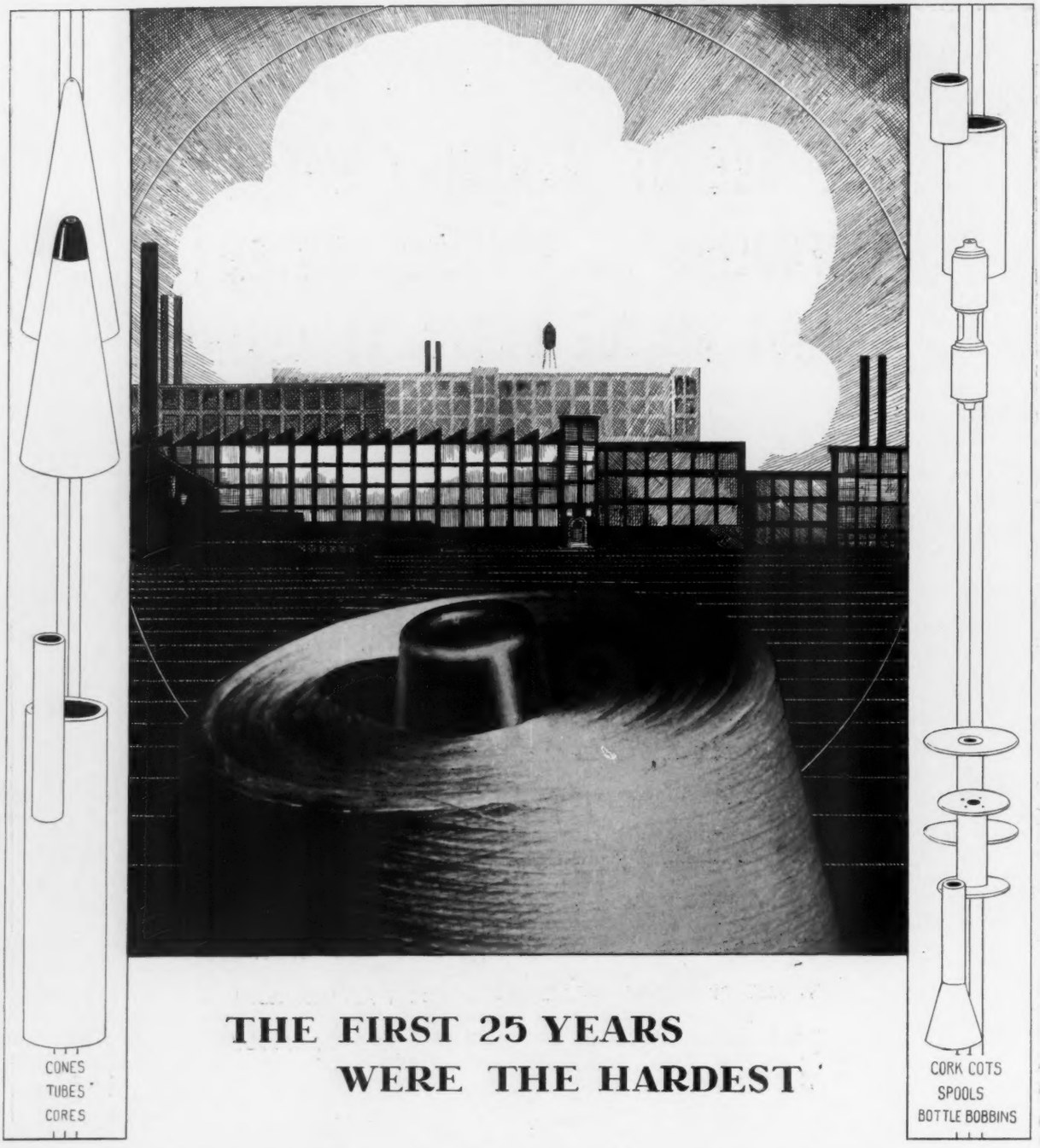

THE FIRST 25 YEARS WERE THE HARDEST

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SONOCO PRODUCTS COMPANY

MYSTIC, CONN.

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Random Thoughts to Make You Think!

What kind of impression do you make on strangers?

Remember that old axiom, "First impressions are lasting."

Do you stop to realize that when you are meeting someone for the first time that you are just as much a "stranger" to him as he is to you. And do you stop to reflect just how you are going to "register" with the other fellow?

* * *

The things you do to yourself—such as amassing riches, achieving success, etc.—are not what count most in this world, brother, it's the things you do to the other fellow that bring you happiness. Give a brother worker a helping hand—do all you can to help him get a job when he is on the "loose"—probably advance him fifty or a hundred bucks to tide him over—

That's friendship.

* * *

Listening is an art—if you will just listen—be attentive and interested, you will get more out of the other fellow than you think you will. Try it!

* * *

The more you give of your experience the more unselfish you are—the "bigger" man you will be.

* * *

Practice what you——

Sure, most anyone can complete the above sentence, but darn few can carry the slogan through in everyday life.

* * *

How many overseers and superintendents realize—

"We all go up and down together"?

If they did you would see more real co-operation.

* * *

Nothing can be wasted until it is first produced.

If you see a child building a house with his blocks, you would say it is a mean man who would walk up and kick it over—well, that is what most of us are doing with things that are produced by some man's labor. We walk up and kick over part of it when we make needless waste.

If we throw away a shuttle, a belt, a bolt or anything that could have been used if we had bought it with our own money, we are wasteful.

If all operatives would use supplies like they would use them if they paid their own money for them, all manufacturing concerns could raise wages.

Pass this thought along to your section men.

* * *

I recently went to the manager of a large hotel to recommend a servant (a negro boy who had worked for me for five years) hoping to get him a job, as I did not need him any longer. I was telling the manager what a good servant he was—he is a good chauffeur, he presses clothes nicely, he knows how to act as butler.

The hotel manager did not seem to be much interested, so I was about to give up in my praise of the negro boy—

Finally I said, "and he is honest"—

Immediately he said: "I'll take him."

Now, being honest, fellows, does not necessarily mean a person will not steal; it means not only that, but to be honest a man must also be truthful; he must be loyal; he must act toward his employer the same as he would want his employer to act toward him.

That one word "honest" got the job when all the other recommendations failed.

* * *

"Every man should be paid a living wage" is an old slogan, but had you stopped to think it over? Do you really believe it?

* * *

There is no difference in value between a kicking mule and a kicking man.

No one would buy either one of them.

* * *

If the average man spent as much time correcting his own faults as he does in hunting for faults in the other fellow he would probably get his pay raised.

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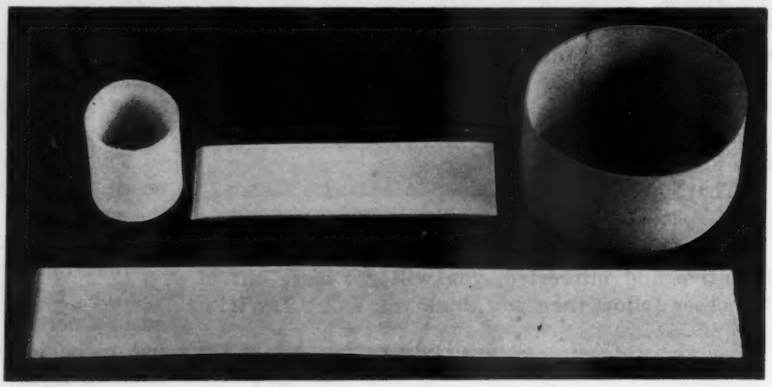

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

How Can The Second Shift Help Be Fitted Into The Community Life?

The subject raised in this article is, in the opinion of many, a tremendously important one. We especially invite comment on it from other men who can contribute to the thought on it.—The Editor.

EDITOR COTTON:

Cotton mill communities are faced with a new problem, one that at present seems rather difficult of solution; I refer to the people working on the evening shift and their relation to the social, civic, fraternal and religious life of the community. In presenting this question I must admit that I have no ready solution to offer. I am also aware that many problems apparently have a way of solving themselves, if given enough time. I believe that if the change from one shift to two shifts could have been gradual, somehow, that our community life would not have been so seriously disrupted. But the week ending July 15, 1933, we were running one shift a day, except mills that had night lines. Then Monday, July 17, 1933, we started up under the NRA code with two 8-hour shifts. In so doing our entire family life and community activities were upset.

Take Henry's case for an example: He has been an assistant overseer in a large southern cotton mill for a number of years. He is married and has children in school. For a number of years he has been fairly active in the religious and civic life of the community, being connected with a leading church, the Sunday School, the Boy Scouts, a national fraternal organization, etc. When our mill started on two shifts he was put in charge of the second shift in his department, with no increase in salary, of course. His hours are from about twelve noon to ten in the evening, with time out for supper. Thus it will be seen how he must readjust his routine to meet this new working schedule.

Of course he is not the only one affected, officers in the various lodges, officers and teachers in the Sunday schools and scout leaders are employed on the evening shift. Practically all of the weekday activities of the organizations and the social functions of the village take place in the evening from around 6:00 to 9:00 P. M.

Another problem presents itself, that of the "Opportunity School", usually called the evening school, or night school. The teacher of this school is usually an office man, or some official working the old hours, from 6:00 or 8:00 A. M. to 5:00 P. M. Thus he would not have time to teach in the morning even if he could arrange to get his evening shift pupils together.

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Now just what, if anything, can be done to fit the folks working on the evening shift into such a scheme of things? Heretofore mills operating night lines usually employed new help coming in from the country or from other mill communities; help that would not be expected immediately to take an active part in the community life. But under present conditions, while it is true that, where possible, the newer employees are put on the second shift, it has been necessary, also, to use on this shift some of the oldest and most valued help.

In the first place, I think that the mill officials should look upon the second shift as being just as important as the first shift. I believe that they should give the second shift leaders opportunity to make contacts with the office and to give them chances of advancement equal with those given the men on the first shift. Also I think that their hours should be arranged so that they will not have to report for work before 1:00 P. M.

I think that the community should become conscious that there is in its midst a class of people whose hours are quite different from the old order, and if possible to arrange some activities to suit them.

For example, one community has done this: When a good picture is to be shown at the theatre a matinee is given from ten to twelve. This suits the person who does not have to be on the job until 2:00 P. M. but the shift leader who must report for work at twelve cannot attend without making special arrangements. One of the churches in this same community held a teachers and officers meeting in the morning with some degree of success. One or two candidates for public office in our state made speeches in the morning for the benefit of the evening shift help. A few athletic events were held in the morning during the past summer.

If the two shift schedule is here to stay, and it seems that it is, I believe that this subject merits more than a passing thought. Why couldn't our social workers give this matter special study in some of their meetings? Our civic clubs and women's organizations might render valuable assistance in arriving at a happy solution to this problem. It might even be worthy

of consideration in some of the meetings of the textile associations.

The old order is changing and the way we handle this matter will affect the future of our cotton mill communities.

CONTRIBUTOR NO. 6391.

ROVING FRAMES
The Winding of the Bobbin

By Fay H. Martin

All roving frames are built with a pair of cones and their function is for the winding of the bobbin. The top cone (which is the driver) is connected to the bottom cone (which is the driven) by a belt that is called the cone belt.

The speed that is produced is just the same as though this belt was running on a plain pair of pulleys with the top pulley the driver and the bottom one the driven. This holds good only while one layer of roving is being wound on the bobbin. When the layer being wound reaches the end of the bobbin, the traverse changes and a new layer begins. When this takes place, the cone belt moves, at the same time, to a new pair of pulleys and it keeps doing so at the end of each change until the bobbin is full.

At the end of each change, the cone belt finds a new pair of pulleys, but the movement of the cone belt is so slight at each change that it is not practical to use a series of pulleys.

Due to the "increment of increase" on the bobbin from one layer to another, the top pulleys gradually grow smaller at each change and the bottom pulleys grow larger because it is necessary to slow down the speed of the bobbin as it grows larger so that its excess surface speed will always be constant and the same as the constant surface speed of the front roll.

When these series of pulleys are figured in relation to the bobbin diameters, as each layer of roving is wound on, and joined into a pair of cones, the result is that the top cone is always concave, meaning curved down from the large end, and the bottom cone is always convex, meaning rounding up from the small end of the cone.

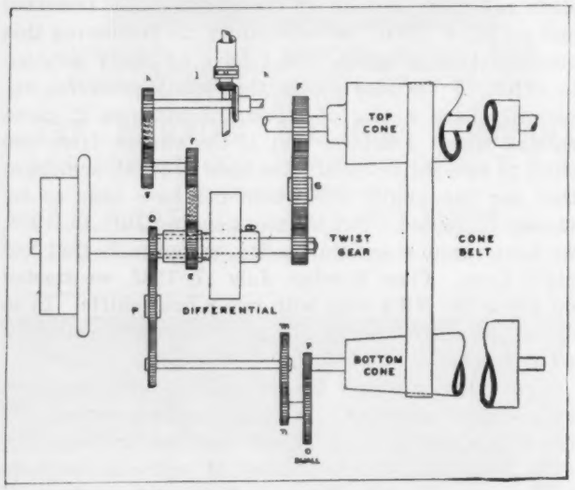
These top and bottom cones, one concave and one convex, when formed make an "outline or contour" that is called a hyperbola curve. The hyperbola curve is the percentage of decrease in the excess speed of the bobbin from one layer to another and when these percentages are plotted against their respective bobbin diameters, they form the hyperbola curve.

The contour (meaning the outline) of the cones controls the winding of the bobbin and therefore the tension on the roving. Tension is governed and controlled by the cones and the cones alone. This is a positive statement and an indisputable fact.

The cone belt, which is one of the most important belts in a cotton mill, simply joins the two cones together and drives the bottom cone. The theoretical cone belt is a string or small cord but a cord does not have the surface of contact to drive the bottom cone with its load, hence a belt is used. The width of this belt should not be any wider at its point of contact with the cones than is necessary to drive the load, then build this width up from the contact sufficiently to give the belt strength and to also fill the shipper fork.

The pull on a cone belt is on the diagonal, i.e., from the high side of the belt on the top cone to its high side on the bottom cone so the narrower the belt is at the point of contact, the better the cones will coordinate. When figuring speeds on these cones, the center line of the belt is taken. Always keep the cone belt clean and free from oil. The worst and most trying position for the belt, in the length of the cones is at the very start of the set at the empty bobbin, for the belt is then on the small end of the bottom cone, for although its speed in feet per second is faster, its point of contact is smaller. Therefore, the chance for slipping is greater.

The differential or compound is in the train of gearing that connects the bottom cone with the bobbin drivers. The differential *does not* control the tension on the roving. Its action is as though it was plain gearing in the train.



The differential is simply an adding machine and its use in a roving frame and in the winding of a bobbin is to add the variable speed of the bottom cone into the positive speed of the main shaft; after which the combined or compounded speeds are carried forward to the bobbin drivers. (See article, page 80, June 1932 COTTON).

Hence if there is an error in the speed being delivered by the bottom cone, the same error will be found in the speed of the bobbin. The cone belt will not correct it, neither will the differential.

The tension is the foundation for good running roving frames and the making of good even yarn.

Since the excess surface speed of the bobbin must equal the surface speed of the front roll, it is very essential that the outline of the cones must be correct. The cones control the tension on a roving frame and for perfect tension cones of the right contour are required.

The above diagram illustrates the cones and the train of gearing for the winding of the bobbin.

Determining The Percentage of Size Applied at The Slasher

EDITOR COTTON:

I would like to submit for "HOW OTHER MEN MANAGE" a discussion as to a method of obtaining the percentage of size applied at the slasher. This article does not enter into such technicalities as may come up regarding what the moisture content of the yarn was when run through the slasher, or just how near bone-dry the yarn may or may not have been when run over the cylinders. It is just a common-sense way of determining the approximate percentage of size as put into a full set of loom beams, and it can at very little or no extra cost be carried on for an indefinite period.

The set of beams to be put through the slasher is weighed, and from this data, with the known yards and ends, the average yarn size is determined. This is essential if one is to determine the approximate length or yards of waste made.

DATA ON SECTION BEAMS

Ends per Beam	Weight per Beam (Lbs.)	Average Yarn Size	Yards per Beam
476	302	50.66	27,000
472	298	50.91	27,000
476	304	50.33	27,000
476	301	50.83	27,000
476	301	50.83	27,000
476	303	50.50	27,000
476	297	51.52	27,000
476	301	50.83	27,000
476	300	51.00	27,000
476	296	51.69	27,000
476	300	51.00	27,000
5232	3303	50.92	

The following calculation is used to obtain the average yarn size:

$$\frac{476 \text{ (ends per beam)} \times 27{,}000 \text{ (yards per beam)}}{840 \text{ (yds. of 1s in 1 lb.)} \times 302 \text{ (wgt. of beam, lbs.)}} = 50.66 \text{ avg. yarn size}$$

The empty loom beams are weighed before going on the slasher, and re-weighed after doffing. The net weight being the weight of sized yarn on the loom beam. The cuts per beam are entered on the test sheet and also the slasher yards per cut. These details are as follows:

LOOM BEAMS DOFFED

Cuts per Beam	Yards Per Cut	Yards on Beam	Pounds of Yarn Per Beam
18	60.30	1085.4	151
18	60.30	1085.4	150
18	60.30	1085.4	151
18	60.30	1085.4	149
18	60.30	1085.4	152
18	60.30	1085.4	148
18	60.30	1085.4	151
18	60.30	1085.4	152
18	60.30	1085.4	154
18	60.30	1085.4	152
18	60.30	1085.4	154
18	60.30	1085.4	151
18	60.30	1085.4	153
18	60.30	1085.4	149
18	60.30	1085.4	152
18	60.30	1085.4	150
18	60.30	1085.4	151
18	60.30	1085.4	152
18	60.30	1085.4	150
18	60.30	1085.4	149
18	60.30	1085.4	151
18	60.30	1085.4	149
18	60.30	1085.4	150
18	60.30	1085.4	151
14		844.2	116
446 cuts		26,893.8 yds.	3738 lbs.

There are 3,738 pounds of sized yarn on the loom beams, and during the above run, 14 pounds of soft or unsized waste was made and ten pounds of sized

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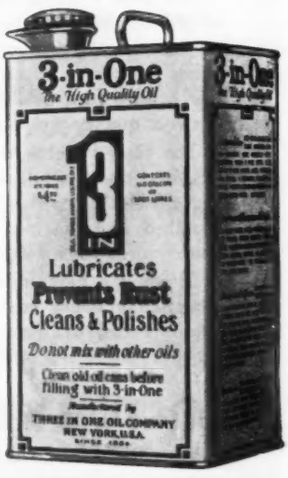

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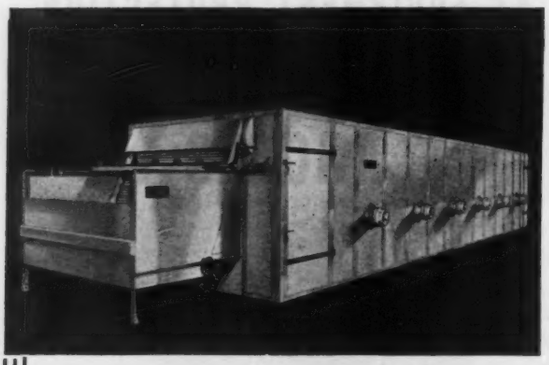
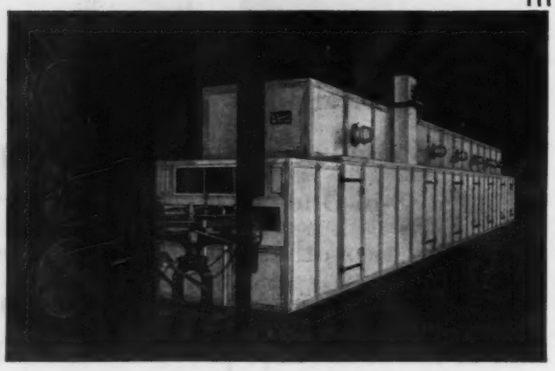


The New Proctor Super Dryer for Raw Stock



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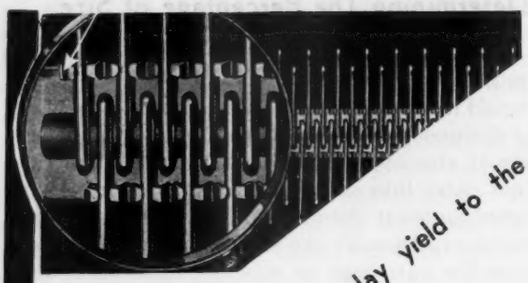

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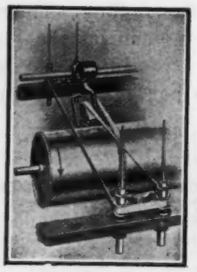

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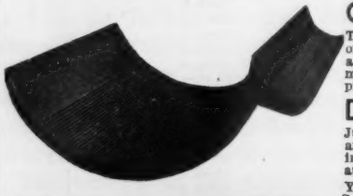

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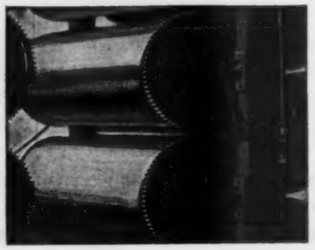

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waste, due to stoppage and other conditions. To determine the percentage of size, we take the original weight on the section beams, or 3,303 pounds, and deduct the soft waste (14 pounds) which was not sized, leaving 3,289 pounds of yarn that was sized. The loom beams doffed contained 3,738 pounds of sized yarn; to this we add the 10 pounds of sized waste, giving us a total of 3,748 pounds of sized yarn.

3,748 pounds sized yarn—3,289 pounds unsized yarn = 459 pounds of size in the yarn.

459 pounds size ÷ 3,289 pounds unsized yarn = 13.95 per cent size

We will have to estimate the yards of waste. We have 14 pounds of unsized yarn and 10 pounds of sized yarn. The 10 pounds of sized yarn is equal to 10 pounds minus 13.95 per cent size, or 8.61 pounds of sized yarn. This 8.61 + 14 = 22.61 total pounds of unsized yarn. The average yarn on the section beams was 50.92s. Therefore,

$$\frac{50.92 \text{ (avg. yarn)} \times 22.61 \text{ (lbs. waste)} \times 840 \text{ (constant)}}{5{,}232 \text{ ends}} = 184.85 \text{ yards of waste}$$

Slasher yards on loom beam	26,893.80
Calculated yards of waste	184.85
Total yards	27,078.65
Yards fed to slasher	27,000.00
Estimated stretch	78.65 yards

78.65 ÷ 27,000 = 29/100ths of 1 per cent stretch

The actual running time for a full set, including all stops for doffing, putting in set, etc., was 24 working hours.

24 hours × 60 minutes = 1,440 minutes
26,893.80 yards on loom beam ÷ 1,440 minutes = 18.68 yards per minute.

Any criticisms or comments will be appreciated.

CONTRIBUTOR NO. 6385.

Bow In Cloth

EDITOR COTTON:

You have published from time to time various discussions on the matter of bow in cloth but I have seen no answers that seemed to be at all conclusive. I would like to submit my views on this subject, to be discussed by other readers. Here is my idea of what causes bow.

A piece of cloth as woven is wider in the reed than in the woven cloth. The ends on the sides must contract while the ends in the center remain straight. The cloth contracts just as soon as the filling is put in. The contraction does not take place in the center of the cloth, but on the ends. The warp in the center of the cloth is straight, but the warp ends near the selvage are at right and left angles, therefore, this is the cause of bow. If the cloth is run through finishing machinery with this first end woven first, the bow is increased as the pull is in the direction of the bow.

Naturally a piece of cloth goes from the loom with the first end woven on the inside of the roll, and then over burlers or trimmers with the last end woven over the machine first, thereby bringing the first end woven again on the outside. The first end woven

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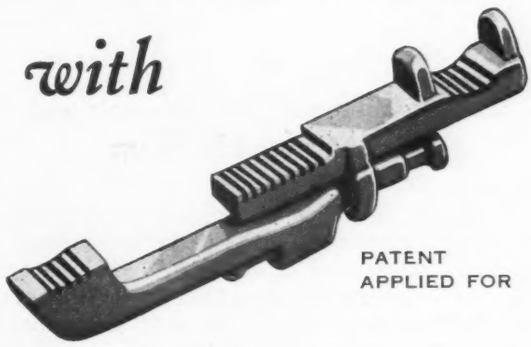

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now goes through the folder and the last end woven is once again on the outside. But this does not tell us whether or not the finisher, in putting his pieces together, takes notice whether or not he puts the first end woven or last end woven through his machines, or whether he puts them both ways, thereby getting a lot of bow in some and none in others. I honestly believe if he will make certain to always put the last end woven through his machines first, he will eliminate a great deal of this trouble.

CONTRIBUTOR No. 6385.

Slasher Cloth and Roll Weights and Size Mix for 22s Warp

EDITOR COTTON:

In the January issue, I read on page 73 the question of "CONTRIBUTOR No 6355" with reference to slashing. He confines his question to 22s warp yarn with a twist multiplier of 4.64, for a cloth construction 96x64, with 3,000 ends per set; and wants to know the best squeeze roll weight, the best slasher cloth weight, and the most satisfactory amount of size to leave in this yarn.

I assume from his article that his cotton is full 1-inch staple, although some mills are running 1 1/32-inch staple cotton for 96x64 construction.

I would suggest that the roll nearest to the warper yarn, or the first squeeze roll, be a 350-pound roll, and the one nearest the cylinders, or the second squeeze roll, be a 500-pound roll. The first squeeze roll allows the size to penetrate, and squeeze the excess size from the yarn. The second squeeze roll might be termed a finishing roll. This roll squeezes the size into the yarn, and at the same time prepares the yarn for quicker drying. These weight rolls will give excellent results if they are covered properly.

After making many studies of various coverings for a squeeze roll, I found that the 16-ounce wool blanket covered roll gives the best results. I would suggest that the rolls be painted with some good lead paint before beginning to cover them to prevent rust. After the first coat is dry, put on a second coat, and while this is wet, wrap them with a 64x64 sheeting construction. Four layers are generally sufficient.

The slasher blankets should be shrunk before putting them on the rolls. It should be done during the week-end, as follows: Cut five yards for the first roll and six for the second roll. Allow sufficient water to run in a kettle—we use our mixing kettle—and heat to 90 degrees F. Put the blankets in and allow them to stay in the water at least 12 hours without further heating.

The next step is to carefully put the blankets on the rolls. The ends of the blankets should not be trimmed for a day or so, after they have been put on, but tie the selvages with string to prevent them from splashing size out on the floor.

Almost every mill has a different mixing, and the same mill will frequently have several mixings in use for various purposes. The result is that there are hundreds of mixings in use that are very satisfactory. It is difficult, if not impossible, to give standard mixings that will be good for all styles.

It should be understood that the climate, atmospheric conditions, the location of the weave room—whether on the ground or upper floor, the character of the goods being made, and even the class of help that weave the goods will affect the results from any size mixing.

The process of slashing warps is one of the most important in the mill and should be in charge of thoroughly competent men. One hour of careless work here will cause weeks of bad work, loss of production, increase in seconds, disorganization of labor arrangement, with consequent dissatisfaction in the weave room. The opportunity here for loss of profits is enormous. The importance is easily estimated in realizing that one slasher supplies warps for from 300 to 500 looms.

Answering your contributor further, approximately 7 to 10 per cent size should be left in the yarn. I believe that the following mixture will prepare warps that will weave extra well: 200 gallons water, 170 pounds corn starch, 8 pounds beef tallow (softener), 4 quarts muriate of zinc (antiseptic substance), 1 pint turpentine (helps ingredients to blend). I suggest that "CONTRIBUTOR No. 6355" try this mixing, make loom stoppage tests, increase the amount of starch 10 per cent, and again make loom stoppage tests.

All machine stoppage tests are misleading unless the broken ends are properly classified. Analyses of tests will help to determine the best mixing for a particular yarn, twist and construction.

I would like to emphasize that broken ends be classified carefully, because the slashing process can only help to strengthen the weak and unclassified ends so they may stand the tension and chafing while weaving. Therefore, each time the size ingredients are changed and such ends become fewer, progress is being made.

I give as a matter of interest the following method of determining the correct amount of moisture and size content of yarn:

Take one yard of sheet before putting in set. Put in an air-tight jar and label, "Before slashing No. 1".

Take the last yard of the first warp doffed; place in an air-tight jar, and label, "After slashing No. 2".

Open jar No. 1, weigh contents. Then place contents in a drying oven for two hours, and weigh while in the oven. This will give the bone-dry weight and the weight of the yarn and moisture.

Open jar No. 2, weigh contents. Then place contents in a drying oven and dry for two hours, and weigh while in the oven. This will give the weight of cotton moisture and starch and weight of cotton and starch without moisture and starch.

If the mill does not have a conditioning oven, the yarn should be tested by some laboratory.

I think on the work described the slasher should run 35 yards per minute on a 3,000 end set. The steam pressure will vary from 5 to 10 pounds during the day.

CONTRIBUTOR No. 6380.

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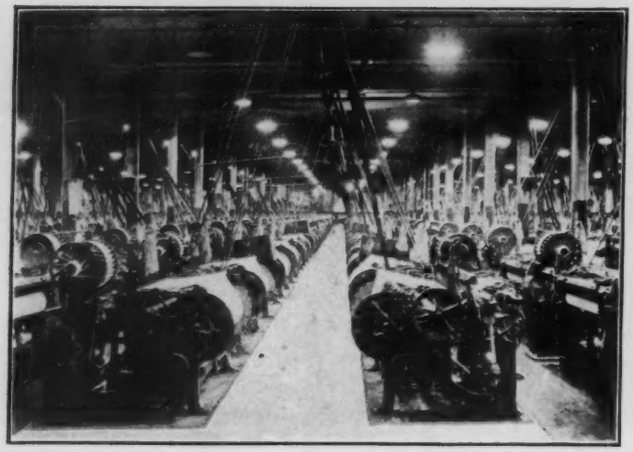

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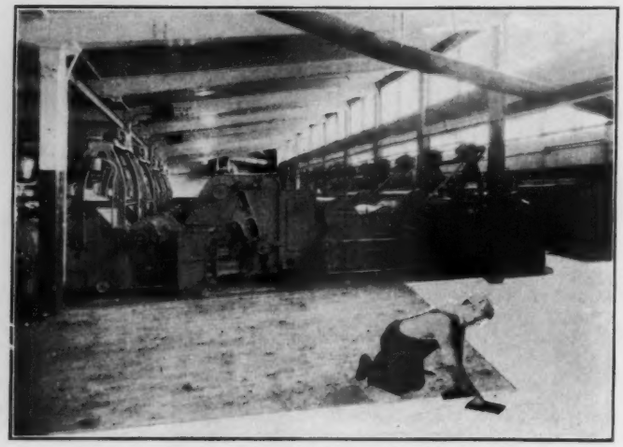

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A Further Discussion of "Uniform Card Settings"

A prominent reader goes into detail in answering a question of The Scavenger Roll. Does his answer satisfy you? . . . . . .

IN THE SCAVENGER ROLL, page 35, January 1935 COTTON, the question was asked as to whether a waste test should be made on every card at the time of grinding and setting to determine the proper settings of mote knives, screens and plates to give desired percentages of waste; what makes such a difference in the amount of waste taken out by different cards in apparently the same physical condition, of the same model and age, and with as nearly the same settings as possible? The point was made that "The same settings used for every card on the same work do not produce like results in the matter of waste percentages."

This drew from a leading figure in the New England textile industry the following comment:

"I have been in close touch with revolving flat cards since 1880, and have worked on or had charge of practically all the different makes of cards made in England and the United States since that time. I have found that practically all the different makes could be made to take out the same amount of waste, using the same general settings, if the cards were in good mechanical condition and had good clothing. There will always be small variations in the amount of waste taken out on different cards, and even on the same card, at different times, but this variation should be very small.

"There have been many times when I have found one or more cards in a lot taking out more or less waste than the standard for the class of work being run. In these cases, the first thing done was to examine the waste to try to find what the cause of the difference was. The condition of the waste will often give a clue as to what the difference is, and the cause can be corrected.

"I do not think it is good practice to make changes in the general settings to get the required amount of waste, as this does not get at the root of the trouble. It is often found that some part (which is not set or checked in the general settings after grinding) has become displaced; this should be found and corrected.

"The rule should be, all machines of the same make on the same class of work, with the same settings, should work alike. If they do not, find out why and correct at that point rather than changing the general setting."

When THE SCAVENGER ROLL read this, he came back with the following suggestion:

"I think it would be advisable to ask your correspondent if he does not consider it impossible, practically, to correct all of the variables in the physical condition of all the cards in a large mill, especially where cards have been bought several years apart, clothed intermittently, etc. Slightly worn bearings, flat chains, etc., it seems to me, can be better allowed for by a simple adjustment of the stripper plate than by expensive and practically impossible general card overhauling. Ideally and theoretically, your correspondent is absolutely right; beyond reasonable limits of keeping cards in good condition, I fear the ideal cannot be obtained."

When this comment was passed along to the original correspondent, whose views are given above, he

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made the following interesting further observation:

"In regard to the question of the practicability of correcting all variables in the physical condition of a large room of cards, I would say it is much more practical to correct the error where it occurs than to try to correct all errors by changing the position of the front plate. Changing the position of the front plate will not always give the results desired, but where it does change the amount of waste removed, it does not remove the trouble but only covers it up.

"The setting of the front plate does not affect the combing and cleaning action of the cylinder and top flats in any way whatever. If the flat comes up to the front plate with a light strip, setting the plate closer to the flat will not increase the weight of the strip as the combing and cleaning is completed when the flat reaches the front plate. If the weight of the strip is heavy when it reaches this point, it can be reduced by setting the plate closer to the cylinder. Any reduction of the weight of the strip by this setting will reduce the quality of the work produced, as the waste removed from the flat will be thrown directly onto the cylinder and transferred to the doffer and into the sliver.

"The weight of the strip can be increased by setting the plate lower; that is, dropping it down toward the doffer, increasing the distance between the cylinder and top flat at the point of the plate. This change in the weight of the strip will not improve the quality of the work produced as the increase will be good fiber which will be thrown on the flat as it is leaving the cylinder and it will show up between the strips. If the plate is dropped too low, this long fiber will be so heavy that the strips may be pulled from it, leaving a web of long fiber.

"I have seen cases where the flat chain was worn so badly that the flat rubbed on the plate when it was set as close as possible to the cylinder. To overcome this condition, the point of the front plate was cut; then the strip came off in a solid sheet.

"To get the best results from cards with as low a percentage of waste as possible, the front plate should be set with the point as high as possible between the cylinder and flat, and set to the flat so it will deliver the whole weight of the strip gathered in its passage over the cylinder. My idea of a good strip condition is that the strip gradually increases in weight from the back of the card up to the front plate and retains that weight out to the comb.

"My object has been when arranging the speeds and settings for cards to get the best possible web and sliver with the least possible waste. To get this result each part of the card must do its own share of the work.

"In regard to using the same general settings on all cards on the same class of work, by general settings I would say the feed plate to licker-in, knife bars to licker-in, under screen to licker-in, licker-in to cylinder, top flats to cylinder, doffer to cylinder, back plate to cylinder and flats, doffer comb to doffer.

"I have had charge of a room of over 200 cards of eight different models, four English built and four American built, ranging from 25 years old to new. About 100 of the old cards had wide flats, 84 per set, some had 105 and the new ones had 110. There were

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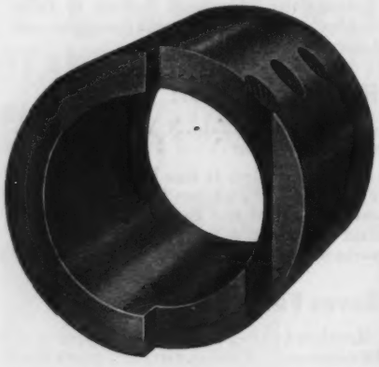

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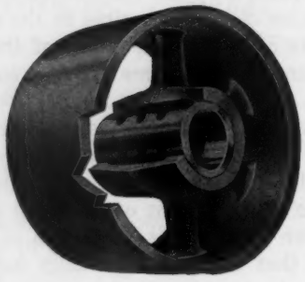

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three different kinds of under screens, the oldest ones had wire bars. Then there were some with small triangular bars, and the newer ones had the deep narrow bar as used at present. Some of the cylinders had spaced fillet such as was used when stripping was done with a bristle brush.

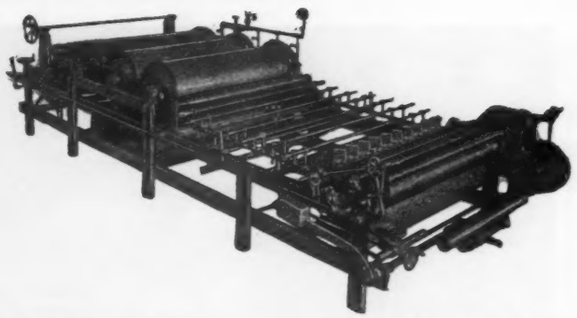
"The same general setting was used on all these cards; the only difference being the front plate. On some cards the flat chains were so badly worn that it was necessary to set the plate as close to the cylinder as possible until the old chains could be re-built. When this was done the cards were put into good condition and set the same as the others.

"To overcome the great difference in the cards, the speeds of the licker-in, top flats and doffers were changed to get the different models working together.

"On stock work, we ran 6 different mixes—two grades of American, two grades of Egyptian and two grades of Sea Island—and very often had three specials—one each of extra fine Egyptian and Sea Island and one Rough Peruvian. The numbers spun were from 9s to 200s. I think you will agree that if a room with such a variety of machines and such a wide range of yarn could be made to work together, almost any room could.

"There might be some question as to how the weight of the strips was found at the different points of travel over the cylinder. The method used was to run the card about one hour so as not to make the test just before or just after stripping. In stopping the card it was done as quickly as possible by using a brake on one of the cylinder pulleys as soon as the driving belt was off. This was done to avoid the gradual slowing down of the cylinder. The flat comb and brush were taken off so that they would not disturb the strips as the flats were turned around. The flats and cylinder were then turned forward together, care being taken that one should not pass the other. This was done by having one man turn the flats and another the cylinder. To turn the cylinder, a bar was arranged to clamp on the rim of the pulley on the cylinder used to turn the licker-in. A chalk mark was made on the end of a flat opposite the end of the bar, and as the flats moved slowly forward the end of the bar was kept opposite the chalk mark in this way. The waste on the flats was not disturbed. The flats were turned around until all of the flats with strips on them were on top of the card. The strips were taken from the flats with a hand card in groups of four; the first four at the back of the card being the flats from the flat comb back to the point of the front plate. This group was marked "front" and the other groups were numbered from one to eleven in some cases the last group would only have three strips, depending on the position of the first flat at the front plate when the card stopped. The groups of four were weighed on an ordinary roving scale, weighing in tenths of a grain.

"You may think this was a lot of trouble but it was very interesting and the knowledge gained of the working of the card under different conditions was well worth the trouble. I have made tests on different flat settings, flat speeds, settings of back and front plates, licker-in and doffer speeds, different times between strippings, etc. I think that if some of the readers of COTTON would make some of these tests they



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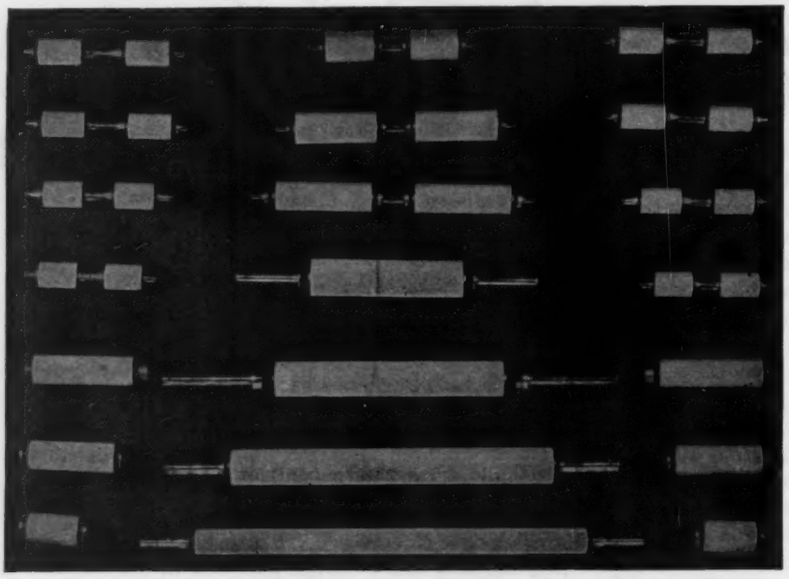

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SIZING FINISHING

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SEYCO SCIENTIFICALLY PREPARED TEXTILE CHEMICALS SEYCO

A CONCERN IS KNOWN BY THE CUSTOMERS IT KEEPS—

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ATLANTA, GA.

When a **Motor** *goes bad*
YOU CAN SAVE MONEY

by sending it to BALLANTINE where it will be handled by experts with years of experience in motor rebuilding.

Barber-Colman Tying-In Armatures, rebuilt and rewound	$9.50
Parks-Cramer Humidifier Motors, rewound	8.00
Holtzer-Cabot Humidifier Motors, rewound, Frame AT20	7.00
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On all Barber-Colman armatures we install new commutators and balance at 5000 rpm. Shafts are brought to original size (.375) when necessary.

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The Pick Counter that has everything

Center Drive (no rights or lefts)
Easy Operating Shift Switch
Tamper-Proof
Locked against Creeping
Rust-Proof throughout
Easily Installed

DURANT MFG. CO.
1922 N. Buffum St. Milwaukee, Wis.
181 Eddy St. Providence, R. I.

would be surprised at the results found, especially with different flat settings and speeds, also the setting of the back plate."

Disagrees with "Jock" about Brushes and Half Laps on Combers

A new contributor takes exceptions to some of the statements in a March article. What do you think? . . . . . .

EDITOR COTTON:

On page 93 of the March 1935 issue of COTTON appeared an article "Some Kinks on Combers" in which the writer, "JOCK (MASS.)", took as his subject the circular brushes and the half laps. He claims that if his advice is followed, a mill will save money and the comber man will save a lot of work and worry. Now, let us consider the facts.

The whole article, while long in words, is very short on essential facts. Take the first part of the article dealing with the circular brushes. When you analyze the statements made there you get something like this: A bad half-lap causes bad brushes and bad brushes cause neppy waste or bad waste; changing the half lap doesn't cure the trouble so according to "JOCK", while he doesn't exactly say so, the only thing to do is to replace both the half lap and the brush. That ought to be a sure cure if his theory is correct.

In the second part of his article, he takes half laps as his subject. Before we go any further, let us keep in mind that in the first part of his article, on circular brushes, he claims that bad brushes are caused by bad half laps. Then he goes right on and disagrees with himself by saying, "When a comber is being overhauled, some overseers demand that all half laps be replaced with new ones, regardless of whether some of them require changing,"—but "JOCK" doesn't think this is common sense and states that if it were left up to him, he would leave a few bad ones in, not very bad, you must understand, but some with bent or broken needles; although in the first part of his article these bent or broken needles were said to be the direct cause of bad brushes.

Then he makes a statement that seems to me to be absolutely ridiculous, but I will say this for it: it is the only part of the article where I can find any probable saving of money on the part of the plant. The comber man reading the article still has his work and worry. However, still talking about half laps, on page 95, "JOCK" made this statement, "I know for a positive fact that it was practically an impossibility for a new half lap to make any difference in the work after the overhauling."

Now, if that theory is sound, you boss carders can start in Monday morning and lay off all of your card grinders, for if bright, new needles with a fine sharp point on half-laps can't make any difference in the work on the comber as compared to the dull, bent and broken needles running for six months on a comber, you are only wasting your company's money by keeping card grinders at work grinding the clothing on the cards, for after all, combing is nothing more than carding reduced to a fine point.

N. C. (R. I.)

TWO OPERATIONS IN ONE

TERMACO reworks waste while cleaning Bobbins

IN mills where every minute counts, and where no chance of hold-up is taken, Termaco Roving Bobbin Cleaners are a major part of the equipment.

A Termaco performs two operations in one. First, it cleans roving bobbins efficiently and rapidly (3,600 an hour), without damage to the bobbins; and second, it reworks the waste so that it can be placed with the raw stock without extra working.

Other Important Advantages

With a Termaco, you are assured of plenty of clean bobbins at all times. As the bobbins are not damaged, large reserve stocks are unnecessary.

The machine does not require a skilled operator. Anyone can run it. Spinners can thus devote their time to the improvement of quality and increased production, which will net for your mill, in a short time, much more than the cost of a Termaco.

The construction of the Termaco is something *not* to be overlooked. The very best materials are used, and every regard for safety is employed.

Without obligation to you, a Terrell representative will gladly prepare a detailed estimate of the savings a Termaco will effect in your mill.

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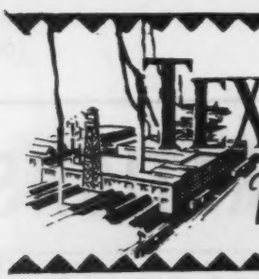
The Terrell Machine Co., Inc.

1200 North Church Street

CHARLOTTE, NORTH CAROLINA

MR. LUTHER PILLING, Danielson, Connecticut, *Representative for N. Y., N. J., Pa., New England States, and Canada*

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*



TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentoined below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

166. Better Cones The World Over—Bulletin describing the Universal No. 50 Winder for silk and rayon. Universal Winding Company, 95 South Street, Boston, Massachusetts.

167. Instant Current Measurement—Describing in detail the Crompton "Tong Test" Ammeter, which measures both A. C. and D. C. current, with no interruption to current flow, determining instantly the load on transmission lines or feeders, the loads on switches, fuses, motors, transformers, generators, etc., as well as giving a long list of representative organizations throughout the country who are regularly using this ammeter. The Columbia Electric Manufacturing Co., 4519 Hamilton Ave., Cleveland, Ohio.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts, Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colorado.

172. Rust Proofing—Free booklet on rust-proofing for spindles, fly frames, rolls and other textile machine parts. Textile Spindle & Roll Corporation, Charlotte, N. C.

173. Over the Rough Spots—28 page booklet describing Stonhard resurfacer for repairing and resurfacing concrete, wood, brick and composition floor, making permanent repairs to badly worn surfaces. Stonhard Company, 401 North Broad St., Philadelphia, Pa.

174. Robertson Chain Link Fencing—giving details and specifications of Robertson chain link fencing, providing efficient and low cost protection for mill property. W. F. Robertson Steel & Iron Co., Elm & Second Sts., Cincinnati, Ohio.

175. Slashol — Pamphlet describing the many advantages and economy of Slashol for sizing, as compared with tallow. Wm. C. Robinson & Son Company, Dock and Caroline Street, Baltimore, Md.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. Monel Metal Equipment for the Textile Industry—A 50 page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

73. New Reeves Catalog No. 99—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

92. Silicates of Soda—A review of the properties of silicates of soda and their various uses. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

95. Onyx Processing and Finishing Compound Catalog—A thirty-two page booklet listing and describing entire line of processing and finishing compounds, covering every process on all types of fabric. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster — describing the various uses for Laurel Brand Products and giving valuable suggestions in silk soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

101. Bulletin No. 169-1. Recording Thermometers. 48 page booklet describing and illustrating how the installation of proper instruments will result in worth-while savings. Foxboro Co., Foxboro, Mass.

104. Warp Sizing. National Oil Products Co., Harrison, N. J.

105. Mildew Prevention. National Oil Products Co., Harrison, N. J.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Virginia.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog — 40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

123. An Outline of History for Anti-Friction Bearings—a treatise outlining the development of anti-friction bearings from their earliest appearance in history to their present important position in industry. Fafnir Bearing Company, New Britain, Conn.

130. Three New Textile Scouring Agents—This 32-page book gives many valuable formulas for the use of Houghton's Wonder Powder—a new type of colloidal detergent—in fulling, scouring and finishing nearly all types of woven and knit goods. Also contains several pages of valuable reference and conversion tables. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive design of special V-Belt drives, numerous standard tables, charts, and belt and sheave list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

146. Lubrication Cost Recording—Outlining the factors to be considered in determining correct lubrication costs, and showing a number of typical lubrication cost sheets to assist a mill in installing an efficient lubrication cost system. Gulf Refining Company, Department C, 3800 Gulf Bldg., Pittsburgh, Pa.

147. Let's "CAN" The Oil Can—describing permanently sealed bearings for life, and for higher speeds and temperatures single seal ball bearings which have to be lubricated only from one to three years. New Departure Mfg. Co., Bristol, Conn.

148. Leather Packing—28 page booklet giving timely hints on the proper selection and installation of leather packings, the various types available, sizes and prices. Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa.

150. Engineering Data Book on Mechanical Rubber Goods—21 pages of useful information and engineering data, designed to simplify the selection of belting, hose and other mechanical rubber goods for industrial service, including a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure. B. F Goodrich Co., Mechanical Division, Akron, Ohio.

152. Plant Checkup List—Crane Company, 836 South Michigan Ave., Chicago, Ill

153. Descriptive Folder of the New Low Cost Hermas Shear—Hermas Machine Co., Warburton Ave., Hawthorne, N. J

154. Johnson Bronze Bulletin No. 340—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drives. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

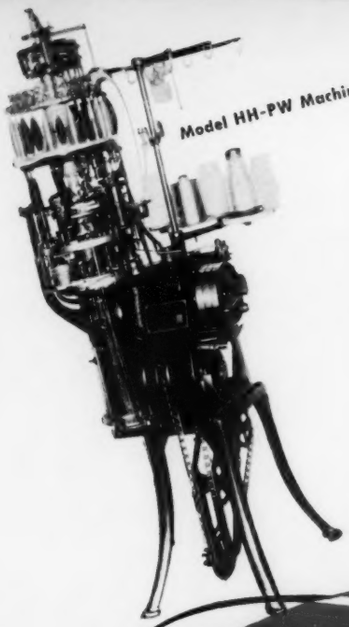
157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers Association, 1794 McCormick Bldg., Chicago, Ill.

159. Corrugated Boxes and How to Use Them—a reference book for use in the selection and packing of corrugated fibre shipping boxes. Hinde & Dauch Paper Co., 454 Decatur St., Sandusky, Ohio.

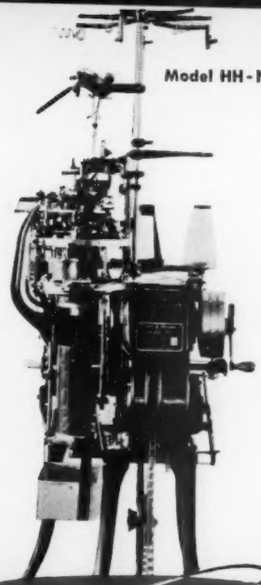
161. Fence—How to Choose It—How to Use It — book explaining in detail how to choose a fence, determine values and prevent costly mistakes. Cyclone Fence Co., Dept. 4211, Waukegan, Ill.

162. A New Deal in Skein Winding, by Albert H. Brugger. A 12 page technical booklet that is a competent, thorough study of how a long neglected process can quickly evolve into an easy source of profits. The Brugger Winding Company, 41 East Gowen Ave., Philadelphia, Pa.

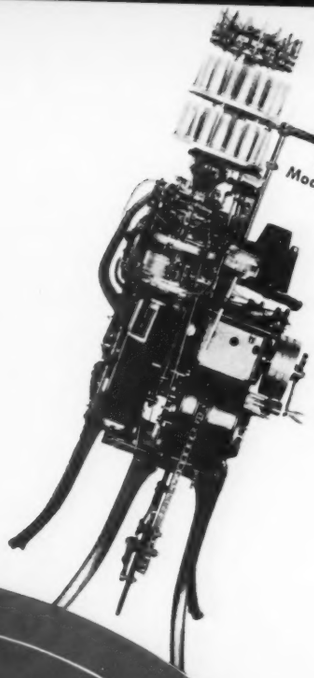
164. Johnson Rotary Pressure Joints—Bulletin describing this rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.



Model HH-PW Machine



Model HH-NRP



Model ES 36 wrap yarns

For completeness

look to the famous line of men's, women's and children's hosiery and underwear machinery . . .

MODEL HH-PW Combines the HH features of economy with comprehensive true panel wrap patterning.

AUTOMATIC RIB BODY MACHINE Extra fine gauge rib fabrics—1 x 1 or 2 x 2, plain or automatically tucked and shaped—for quality underwear.

MODEL ES Distinctive wrap patterns in single, or multiple, needle stripes, and in three-color clox or all-over designs.

MODEL HH For economical manufacturing of endless varieties of float-stitch stripes, clox, and all-over patterns for half-hose.

MODEL K With elastic Welt, Square Heel, and knit-to-fit leg, ankle, instep, and toe—produces ladies' hose—plain or fancy—excellent in quality and profitable to merchandise.

MODEL HH-NRP A new machine for perfectly plaited (needle deflective method) twenty-five step patterned half-hose—either multi-colored Argyles, all-over patterns or delicate stripes and clox—and with complete elasticity of fabric.

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SCOTT & WILLIAMS

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366 Broadway, New York, N. Y.

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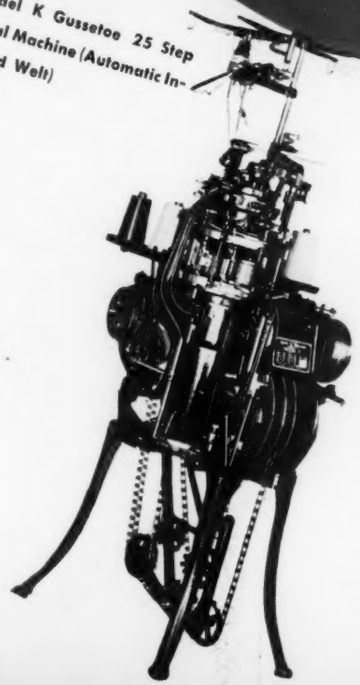
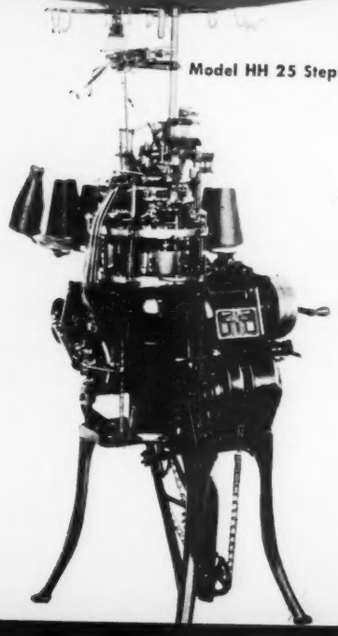
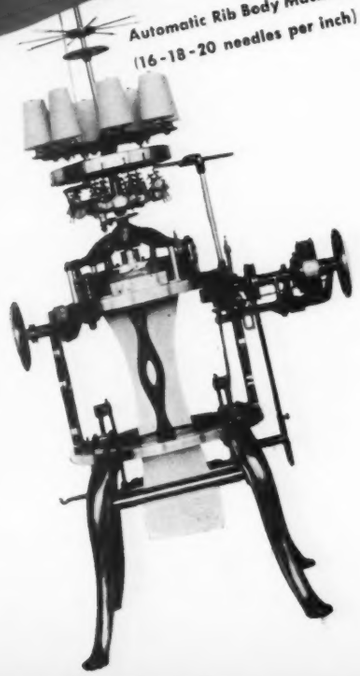


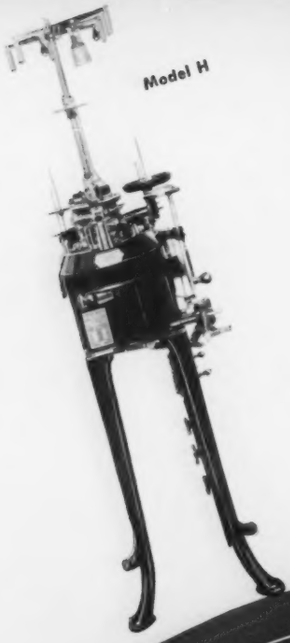
Model K Gussetoe 25 Step Spiral Machine (Automatic Inturned Welt)



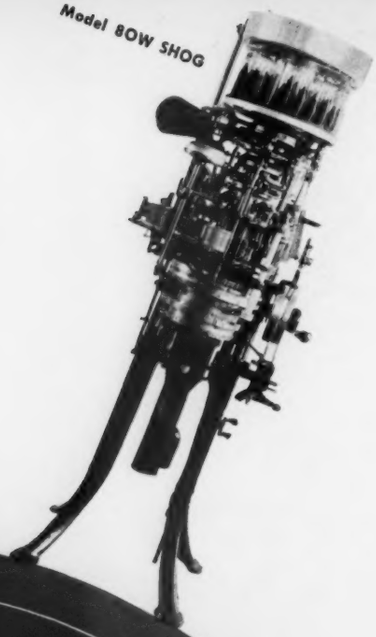
Model HH 25 Step Spiral



Automatic Rib Body Machine (16-18-20 needles per inch)



Model H



Model BOW SHOG

and remember

behind every machine shown on these two pages there is a splendid tradition of quality leadership.

MODEL BOW SHOG Facilities for using 80 wrap yarns, with patterning possibilities of 25 steps plus *shogging* backward and forward of wrap yarns, produce blended and contrasted wrap color effects in unlimited variety of clox and all-over patterns.

MODEL L With a wrap yarn for *every* needle, shogging, and scope of 15 step wrap patterning—this machine (built 200 needles or coarser) produces the exclusive fancy half-hose (especially wool combinations) previously imported from Europe.

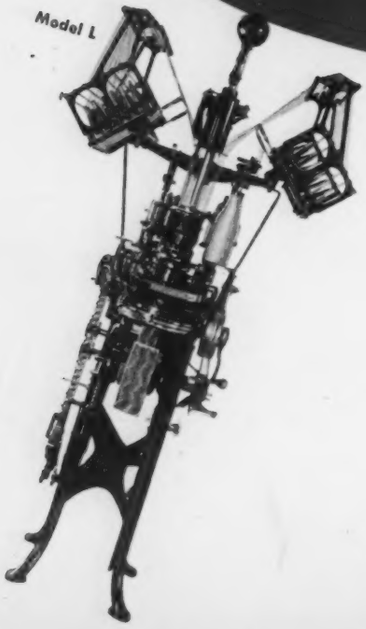
MODEL H The ideal machine for all gauges—including 70 gauge—of infants' and children's anklets, half-sox (plain or striped) and full length ribbed hose—excelling in production and simplicity of operation.

KOMET Built in all diameters and gauges (as fine as 3¼" 240 needles) required to produce any combination of ribs in tops and legs of ribbed-to-the-toe hosiery.

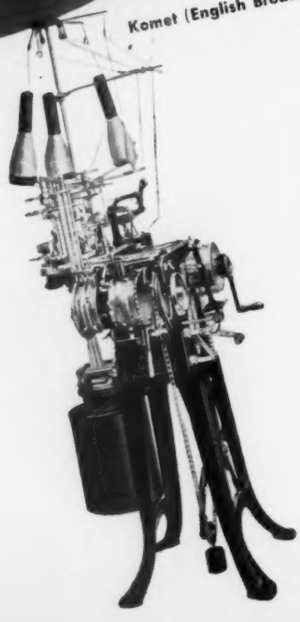
STANDARD-TRUMP BROS. MACHINE CO., INC.

366 Broadway, New York, N. Y.

Established STANDARD TRUMP 1872



Model L



Komet (English Broad Rib)

KNITTING SECTION

A Discussion of the Problem: "What to do with Old Machinery"

"WHAT shall we do with the old machinery?" is a problem confronting many manufacturers contemplating modernization of their plants. The question was discussed in incidental group side conferences at the recent Knitting Arts Exposition, where it was the business of machine manufacturers to elucidate the features of their later models whereby production of more readily marketable goods at a possible lower cost per unit was easily demonstrated. "But what am I going to do with the machines that are to be replaced?" the goods manufacturer asked of the machine manufacturer.

The old and obsolete machine problem confronts most textile trades, and is of especially deep interest to manufacturers of hosiery who for months have been pulling against the stream in trying to compete with modern installation in a market more conspicuous for price inadequacy than for volume of business. After all, say manufacturers who laid something aside out of their profits for the inevitable rainy day, price competition that for some individuals was abandoned only when credit was exhausted, is the answer to the question why it is so difficult to replace old machines with modern models.

The machine builders seem to have maintained a stable market for their products throughout as trying times as probably ever were experienced in the hosiery industry. There have been no complaints among machine manufacturers of rivalry in the matter of perpetual price cutting. It has been remarked in machinery circles that had that industry been as reckless about prices and the future as have so many units in the hosiery producing trades, every mill in the country might now be fully equipped with down-to-the-minute machinery and still be going backward by the same route that led to profitless competition in the past six months.

Observation from neutral ground has given rise to the question whether manufacturers, in price competition, wrote off in their inventories the permissible and virtually mandatory ten per cent for obsolescence, and if so, what became of the money? The usual deductions for machine "insurance," had they been taken, it is held, would enable many of the mill owners in need of modern equipment to solve the problem of what to do with the displaced machinery. The machine manufacturers, it was suggested by an efficiency student, should not be expected, in the present, and any recurring dilemma from the same cause, to take care of the textile manufacturer who neglected to take care of himself. Commenting on this phase of the problem, an official of a corporation internationally known for its output of knitting machines said:

"Before the existing code of the automobile trade set a trade-in price on old cars, dealers were outbidding one another on allowances, and some actually bid away most of the profits on the cars they sold, while the manufacturers were making money. I believe no such practice has crept into the textile machine business. While there has been a considerable curtailment of installation of late models, prices were not slaughtered in efforts to get orders for machinery. I believe," said the person citing the evil of excessive bidding on old automobiles in order to sell new ones, "hosiery and underwear manufacturers, and probably all textile manufacturers, who prepared for and are benefiting by new installation, approve the conservative policy of the machine trade. Anyway, I doubt there is potential production by modern machinery in excess of market consumption."

One solution of the old-machine problem is supplied by a manufacturer of women's full-fashioned hosiery who is using a part of his plant in the production of a somewhat recent innovation in anklets, after finding that his cost of producing women's silk stockings with the old equipment kept him out of the running.

Obviously the failure of some mill owners to rid themselves of the obsolete machine incubus is operating in the direction of a redistribution of production, to the advantage of the more thrifty or less unfortunate, as the case may be. The eventual outcome of efforts toward a more nearly balanced hosiery industry will, it is predicted, be a sacrificing of many old and obsolete machine units in order to provide for installation of a few of the absolutely modern, for keeping in step with the style factor as well as competing in operating cost. The cycle, say observers, has made more than a half-turn for the hosiery industry, so that the industry is on the way out of what some declare is the most trying period in a decade of experience.

Editor's Note—In connection with the foregoing discussion, it is interesting to note that one prominent southern full-fashioned mill recently junked its old equipment in purchasing and installing 21 twenty-section machines to replace eighteen-section equipment, thus sensibly disposing, for them, of this problem of what to do with old equipment.

The Value of Machine Tests in Aiding to Reduce Hosiery Imperfects

By Milton M. Abrams
Ajax-Vertex Associates,
Phoenixville, Pa.

A MACHINE test serves as a signal flag for a hosiery mill. The flag will indicate either "Fair Weather" or "Storm Ahead" according to the way the machine test report shapes up. A machine test which shows a storm warning signal should be immediately looked into and investigated.

Machine tests should be taken periodically at regular intervals in a full-fashioned hosiery mill and should be taken on all machines, both leggers and footers. The dates on which the tests are taken should be varied so that the knitters will never know exactly when the test will be taken.

In a large mill it is not always practical or possible for a complete test to be taken of every machine each week. Therefore, it might be a more feasible policy to test half the machines one week and the other half the second week and then repeat the process over again at the commencement of the third week.

The person taking the test must issue careful and explicit instructions or else the test will lose a great portion of its value. The best idea for taking a machine test is to notify a legger that you are going to take a test set from his machine. Notify him of this when the set is past the leg narrowings because the major portion of the leg is then finished and that portion already knit is where most of the defects will show up. Number each stocking with colored chalk according to the section of the machine. For example, the first stocking will be marked Number One, the second stocking on the machine, Number Two, etc. After the set has been removed from the machine it is then turned over to the footer and the number of the section of the footer is also chalked onto the foot of the stocking after the stocking has been footed. The test lot is then looped and seamed and turned over to be examined.

Description of Test Ticket

Figure 1 shows you the face side of test ticket No. 549, which is being used for such a test as the one being discussed. One of these tickets is made out for every test on each machine. The style number, the legger machine number, the name of the operator, the footer machine number, and the name of the operator and also the names of the Looper, Seamer and Examiner, are all marked on the ticket. The ticket is then tied onto the bag containing the test lot so that the merchandise is identified as a test lot of goods and is not placed in stock with the regular merchandise.

If a special test is to be made according to the individual section on the machine, metal tags (similar to ordinary safety pins except larger) must be attached to each stocking. These metal tags can be purchased with numbers from 1 to 100 stamped on them. The number corresponding to the section of the legger, as already marked on the stocking with chalk, should be pinned on the welt of the stocking. The number corresponding to the footer section number should be pinned onto the toe. This is done because in dyeing the chalk numbers are washed out. If it is not deemed necessary to take the test according to the section numbers of the machine, this procedure can be eliminated and it will not then be necessary for the legger or the footer to chalk mark the numbers of the sections on the stockings.

The examiner takes a very careful examination of the test lot and fills in all information on the portion of the card marked *A* in Fig. 1. She also marks in on the line above, the quantity of good work, menders and latchers that she obtains from the lot.

A special dye order is then made up covering this lot and the merchandise is put in dye. A semi-dark or dark shade is advisable as the defects are more noticeable in a shade of this type.

Examining for Machine Defects after Dyeing

When the goods come back from the dyer they are boarded and turned over to a special machine test examiner. This examiner is specially trained for this type of work and has been selected for her thoroughness and careful handling of inspections. Unless the machine test examiner does her work carefully, intelligently and conscientiously, the full benefits of the machine test are lost.

The work is carefully graded for defects and these defects are filled in on the part of the card marked *B* in Fig. 1. The operator also fills in the back of the card which is illustrated in Fig. 2. It will be noted that every possible defect in a stocking is included on this card, and the full value of the test can only be obtained if the examiner "knows her business". On the back of the card (Fig. 2) are comments on the way the merchandise finishes up for size, length, seaming, topping, etc. In fact, by the time this test is completed, it has served not only as a test for the knitting department but also for the looping, seaming, dyeing and boarding departments.

At the bottom of the back of the card (Fig. 2) are spaces for a weight test. This is only used when a special test is to be made for testing the yarn content of the stocking. The same holds good for the next two lines dealing with courses per inch.

A well trained and efficient examiner can look over and examine a surprisingly large number of tests in a day.

After the tests have been completed on all the ma-

chines a composite listing is made of all the defects. These are tabulated and are then gone over with the mill superintendent. If any particular defect grading shows too high a percentage, a general drive is made throughout the plant to eliminate this defect. In addition to this, the superintendent goes over each test card individually and checks up with the knitter on the defects shown on his particular work. Very often the fixer is called in on this discussion as in some cases the defects are caused by incorrect adjustment of the knitting machinery.

These tests show clearly where the irregulars, menders, seconds and thirds come from and by getting after these defects the percentage of good work can be raised. This, of course, means more first quality goods and means money saved for the mill. It also keeps the knitters and other operators "on their toes" at all times as they realize that their work is being constantly checked and examined and there is little possibility for their sending through inferior work consistently. It also gives the superintendent a line on his workers and shows up the efficiency of the good operator as well as the inefficiency of sub-standard operators.

It is a good plan to file the reports on these tests and as each succeeding test is made it should be compared with previous ones to see if there have been improvements and progress made.

Style No._____ Nº 549 Lot No._____

Date_____ Bag No._____

Legger No.	Name	
Footer No.	Name	
Looper	Seamer	Examiner
Good Work	Menders	Latchers Total
Welt Narrowings	Legger Narrowings	Footer Narrowing
Welt Pull Threads	Leg Pull Threads	Foot Pull Threads
Broken Picot	Broken Needles Welt	Broken Needles Leg
Broken Needles Foot	Broken Seams	Corner
Cuts	Loose Course	Topper
Looper	Footer Hooks	Thirds
Classified	Firsts	Throw-outs
Slugs	Mended in Grey	Sleaze
Bad Topping	Uneven Denier	Turned in Picot
Short Lengths	Bad Foot Matching	Sinker Lines
Bad Plaiting	Turned out Picot	Needle Marks
Bad Looping	Bad Seaming	Soiled
Menders	Latchers	Thirds
Pull Threads	Lace Holes	
Cuts	Cuts	
Toe Narrowing	Toe Narrowing	
Heel Narrowing	Heel Narrowing	
Leg Narrowing	Leg Narrowing	

Fig. 1, at left, shows face of test report ticket used in system described in accompanying article . . .

Style No._____ Dozens _____

BOARDING DEPT. COMMENTS:

Size of Foot_____ Toe_____
Length of Leg_____ Heel_____
Welts_____ Seam_____

FINISHING DEPT. COMMENTS:

Length Overall_____ Loose Course_____
Length Heel_____ Topping_____
Length Welt_____ Plaiting_____
Foot Matching_____ Sleaze_____
Denier_____ Menders_____
Seaming_____ Picot_____
Looping_____

WEIGHT TEST: MULLEN TEST:

Welt Foot	
Leg Total	

COURSES PER INCH:

Welt	Leg	Splicing	Heel
Sole	Toe		

GENERAL COMMENTS

Fig. 2, at right, shows the back of the test report ticket, carrying the boarding and finishing department comments, weight test, etc.

Needles may look alike. But, what they accomplish in finer qualities, greater speeds, more firsts, fewer seconds — a clearer, sheerer fabric — discloses their actual value. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to profitable performance.

The prescription for better knitting

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PENNSYLVANIA

Southern Office: Provident Bldg., Chattanooga, Tenn. • Louis Hirsch Textile Machines, Inc., Special Representatives

ROYERSFORD NEEDLES

KINKS-- from a Knitter's "Bag of Tricks"

By R. E. Sponagle

WHEN plaiting on full-fashioned goods with mercerized cotton in the heel, sole and toe, it is necessary to keep a close check-up on the stockings for plaiting streaks, speckled plaiting, etc. Here are a few tricks that will help to simplify this check-up and also eliminate a lot of seconds.

In plaiting with mercerized cotton, the thread runs over a felt tension pad, before reaching the needles. These tension pads must be kept at the proper height to insure good plaiting. If the pads slip down in the tension cup, the tension on the thread is slackened and poor plaiting will be the result.

Here is a simple method of keeping these pads at the proper height: Have wooden blocks cut to fit into the tension cups. These blocks can be made any desired height. They should be made from soft wood and the top side must be rounded. Now, take a felt tension pad and tack or glue it over the top of the block. Insert in the tension cup and now—you have a tension pad that must stay put. With all of your tension pads fixed in the described manner, good plaiting must result, if the machine has the proper setting.

In any well managed mill, plaiting is tested frequently. These regular check-ups guarantee against any large amount of bad plaiting reaching the finishing room. A good method of testing plaiting in the grey goods, is as follows: Take a full set of stockings off a legger. Start at the left end of the machine and number the stockings in the welt. Have the footer place the stockings on the footing machine according to the numbers in the welt. That is—starting at the left, one, two, three, etc. It can now be readily determined just which section the stocking was legged and footed on. Next, make a testing solution by mixing about 25 cc's of blue throwster's tinting (fugitive dye) to six or eight quarts of water. Stir until all of the tinting has been dissolved. Now take the stockings to be tested and dip the plaited portion into the solution, working the stockings about for a minute or so. Wring the stockings as dry as possible and hang in a dry-box for further drying. When dry, every little mark and streak that has been caused by poor plaiting will show up glaringly. As you have each section number on the stocking, the cause of the trouble can be traced back to the section from which the stocking was knitted and corrected immediately. The throwster's tinting will readily boil out of the stockings when they are boiled off to be dyed.

What mill hasn't had the experience of getting a sudden deluge of topper menders—corner holes, breakouts in the creasing, pullers in the leg near the instep, etc. When this work is taken back to the footer, it is often a question as to just which topper has caused the trouble. It is a simple matter to eliminate this condition. Give each topper a number. Get stamps and stamp pads. Have every topper stamp her number on each stocking she tops. This will take very little of the topper's time and is a sure-fire check-up. The topper, knowing that her work can readily be identified, is bound to be more careful.

In some mills, there is experienced considerable difficulty with stockings that break out at the seam, where the welt joins the boot. The reason for this is: When the welt is stretched over the leg, the hard strain of the stretch is centered on this point. This trouble can be eliminated if the following precaution is taken at the seaming operation. When the seamer has finished the stocking as far as the welt, have her take the four welt selvages (instead of the usual two) and seam the four selvages together for about three-quarters of an inch. Two of the selvages can now be dropped and the stocking finished in the usual manner. When this stocking is stretched in the welt, it will be noticed that the strain of the stretch will not come at the point where the welt joins the boot, the strain will be further up in the welt. The seaming

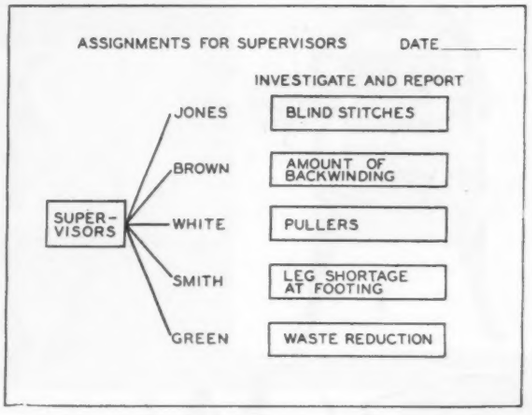


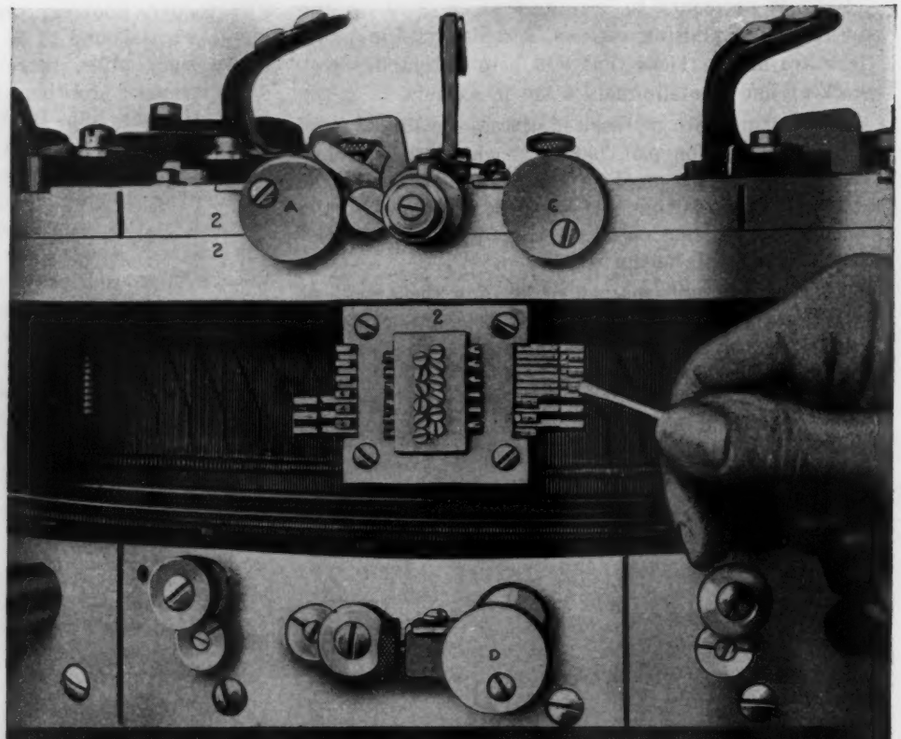
Chart showing how one mill assigns different duties to its respective supervisors . . .

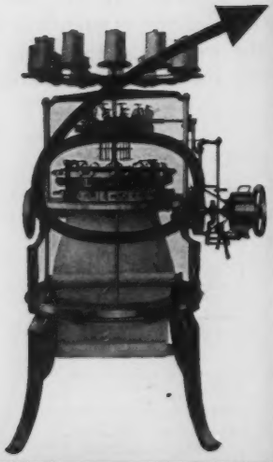
production may be slowed up a trifle, until the seamers get accustomed to seaming the four welt selvages together, but after a while the seaming production will become normal again. Besides, the confidence created in the customer's attitude toward stockings that are seamed in this manner, will repay any mill for the slight amount of time taken to train their seamers to seam in this manner.

Supervisory staffs, that is, machine fixers, foremen, foreladies and all others holding responsible positions in the production department, are apt to become lax in their activities, unless they are "pepped up" occasionally. These people, no matter how conscientious they might be, are only human. It is only natural that if they go along in the same old routine, day after day, they fall into a rut. If this same group were put to the test, it might be surprising the amount of new ideas they could advance for the betterment of

WILDMAN
THE WORLD'S STANDARD

A marvel worker in RAYON





The WILDMAN SPRING NEEDLE BODY MACHINE

***"—tuck patterns in great variety. A fine gauge machine—quickly, easily changed from one pattern to another by means of a set of twelve presser cams at each feed. And each feed is fitted with adjustable cams to control the long and short butt needles—and to change the cams from plain knitting to long and short butt needle knitting requires only the turn of a button at each feed."**

***Quoted from a recent booklet FREE—on request.**

WILDMAN MFG. CO., NORRISTOWN, PA.

LOT No. 1 TOTAL DOZ. 1 DATE

INSTEP	PLAITING	PICOT	SPOTS	DIRTY	RINGS	MEND.	KNOTS	NEEDLE MARKS	PULLERS
𝍸	/	/			𝍸 ////	///	////		/

Form on which special inspectors record findings when examining each stocking in different lots of "seconds"

quality and production. It is up to the mill management to get their supervisors keyed to the point where they will advance some ideas that will improve the quality, or cut the cost of manufacturing. To do this, a meeting of the supervisors is called. They are given a talk on quality and production, at which time the following plan is outlined to them. Have a chart drawn up in the manner of the one herewith.

As will be noticed in the chart, each supervisor is given an assignment to be reported on, say within a month's time. This will allow ample time to investigate the different problems thoroughly. Understand, the problems on the accompanying chart are merely examples. Each mill will have its own individual problems, therefore must draw up its own chart accordingly. If any saving is effected, or any point of quality improved by this method, it might be well to reward the supervisor responsible for the saving, or improvement. This will help to stimulate the efforts of all, to accomplish something. New problems can be added monthly and the organization will be kept continually on its toes. This plan has been tried and tested and the results were found to be very gratifying. As has been stated before, supervisors are only human—show them the light and they will follow.

Castor oil! Grease! Tallow! Bee's wax! These have all been used to lubricate friction leathers—and with various results. The best friction lubricant is the following—Mix equal parts of castor oil and graphite belt dressing together. Each morning, when the frictions are cold, apply a small amount to the friction rod and work into the friction leathers. The life of the friction leathers will be lengthened and friction trouble reduced to a minimum.

To constantly try to decrease the amount of seconds at pairing, is a problem that confronts every mill management. The wise management keeps a tabulated record of all seconds, a copy of which is sent back to the knitting room daily. To do this, a girl, or a number of girls (depending upon the mill production) should be trained to inspect seconds. The girl doing this job is given a lot of seconds to examine. She examines each stocking and records her findings on a form as shown herewith.

If a check-up is kept on seconds in this manner, it is a simple matter to determine just where the trouble lies. Knowing this, it is now a matter of eliminating the cause. If this plan is worked in a conscientious manner, there can be no doubt as to its practicability.

Gillet et Fils, France, Get Rights to Aqua-Sec

Exclusive rights for the Aqua-Sec processing of silks and rayons for France, England, Italy and Switzerland have just been granted to Gillet et Fils of Lyon, France, it was announced recently by Donald M. Martin, president of the Aqua-Sec Corporation.

Gillet et Fils, with their subsidiary companies, are the largest dyers and finishers of silks and rayons in France, England, Italy and Switzerland. The subsidiary in England is Joshua Wardle, Ltd., Leak Staffs, England. The European dyers and finishers will process fabrics by the Aqua-Sec method to make them water-spot-proof and perspiration-stain-resistant exactly as is done in this country at the present time by the United Piece Dye Works.

In announcing the arrangement, Mr. Martin pointed out that "this important step will make possible a complete tie-up between the style centers in this country and the couturier houses in Paris. Aqua-Sec will be offered abroad under the same name as in the United States inasmuch as the name fits perfectly there as well as here. Several of the large fabric manufacturers who are using our process in the United States and who have European connections will now be able to completely round out their service on fabrics through this arrangement with the leading dyers for European countries".

Two Millionth Patent Issued

The U. S. Patent Office issued its two millionth patent recently, according to Paul B. Eaton, Patent Attorney, Charlotte, N. C. The patent was issued to Joseph Ledwinka of Philadelphia. It is significant that it relates to a subject matter which has played a predominating part in the progress of the country for the past two decades, namely, automotive, as it was for an automobile wheel and is assigned to Budd Manufacturing Company.

The first patent was granted in 1790 to Samuel Hopkins for a process of making pearl ashes. During the next 46 years only 9,902 patents were granted when the patent office burned and as it was impossible to reproduce all of the patents, a new numbering system was begun and in the 99 years following 2,000,000 patents have been issued. It is astounding that of this number nearly one-fourth have been issued within the past ten years, for in May, 1925, patents were being numbered as issued in the neighborhood of 1,536,000. Yet about fifty years ago, an examiner in the patent office resigned, stating that everything had been invented which was worthwhile and thus he would have to look for another calling in life.

Explanation of the Uses for Left-Twist Silk in Full Fashioned

Also answers question as to the use of silk for seaming thread . . . . . .

EDITOR COTTON:

This answers the questions of "CONTRIBUTOR NO. 6386".

His first question calls for discussion as to the use of left twist instead of right twist in knitting full-fashioned hosiery. I am of the opinion that best results will come from left twist where so-called direct knitting silk is used in connection with three-carrier or ringless hosiery. The general practice of handling gum silk in the production of full-fashioned hosiery up until the last two or three years has been to backwind the silk as received from the throwster. The backwinding operation being done mainly to moisten the silk, which is usually put up in small cones of the correct size to represent about one day's use. Silk handled by this method and properly handled has all of its wiry, harsh nature temporarily removed and is wet enough to make it cling to the cone when stopped.

With the advent of the three-carrier system, where three cones of silk are employed to every knitting head rather than one, it has been found rather impractical to use backwound silk due to the fact that the smallest size cones will last much longer than the single cone formerly would, and accordingly the silk will dry out much more, bringing about a wide variation of wetness and dryness of silk during the process of consuming three cones.

Then, too, the starting and stopping on three cones is naturally three times as great as on one cone. On single carrier knitting, one cone producing the entire leg pattern, the idle time of the silk at each end of the stroke of the carrier is not sufficient to allow the silk to drop down under the base causing an underwound condition and broken thread. On the other hand, with the three-carrier system, the idle time of the silk is much longer, and with the usual attendant vibration of the machine, trouble from right twist silk falling under the cone while idle and being broken when started up again will develop. In other words, right twist has a tendency to throw itself away from the cone, while left twist has a tendency to throw itself against the cone, and thus prevent dropping down and causing press-offs. This we believe to be the only advantage in left twist. I do not think the left twist will give any better appearance of fabric than right twist.

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

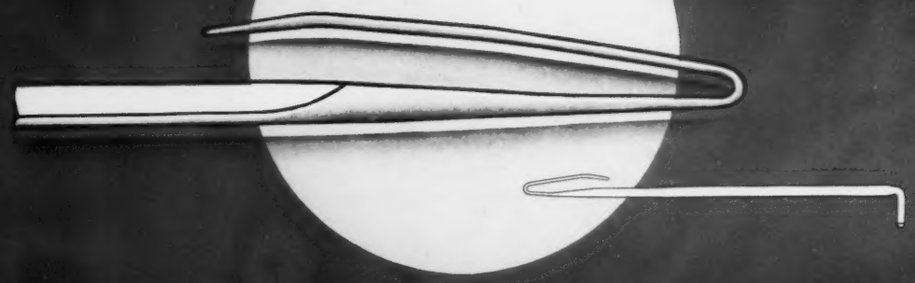
Prefers Cotton to Silk for Seaming

He then asks as to the use of silk yarn for seaming instead of a cotton thread. I believe this subject has been thoroughly covered by fairly recent discussion in COTTON. I doubt whether any appreciable number of well informed hosiery manufacturers are experimenting with silk seaming thread at this time, especially with both threads—that is, the needle and hook threads. Some manufacturers continue to use silk thread in the needle with cotton in the hook, thus giving the exposed part of the seam a silk thread exposure rather than cotton. But I am of the opinion that most manufacturers are now using high grade mercerized seaming thread for the needle rather than pure silk. The disadvantage of pure silk lies in the fact that high twist is required for a seaming thread, and high twist on silk produces a much harsher finish than on cotton, resulting in the silk thread chafing itself in two and causing broken back seams after short wear of the hosiery, and oftentimes cutting stitches in the fabric and producing runs.

CONTRIBUTOR NO. 6387.

MACHINE-MADE MEANS

Uniform Taper



It's easy to talk about the need for uniformity in knitting needles; it's another thing to show just how uniformity is attained. But that's just what we're doing . . . and illustrating it in detail!

Uniform taper is essential for uniform knitting. It is a detail of tremendous importance. As the needle bar rises in the knitting operation, the stitch partially formed beneath the beard slides down beyond the end of the beard. The taper must be gradual so that all stitches will slide evenly . . . and so that uniform pressure may be secured in the closing of the beards. Here is just one phase where machine precision achieves surer more accurate results — continuously! For the work of machines is unvarying . . . stabilized.

"Machine-made" explains the unvarying uniformity of Torrington needles, not only in the more obvious features, such as length, width, temper and finish, but in every one of those invisible details that count so much in obtaining smoother, more uniform knitting.

OUR PHILADELPHIA RENEEDLING PLANT

1 Every job handled by experts with special modern equipment.

2 Each job kept intact on an individual truck throughout the process.

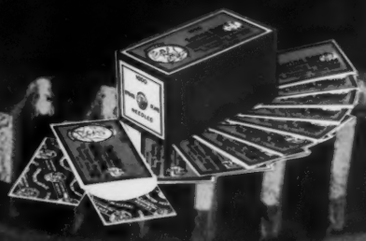
3 Bars are washed in a special fluid; scrubbed with revolving brushes.

4 Bars are straightened with a special device; brasses resurfaced; slots checked mechanically.

5 Bars filled with Torrington needles; straightened and gauged three ways; spaced also — by gauge.

6 Beards raised uniformly; checked by gauge for height and central setting.

TORRINGTON Spring Beard **NEEDLES**



RID YOUR FABRICS OF

Frayed yarn

• As every good knitter knows, needles *must* be entirely free from rough spots or sharp edges. Otherwise strands of thread catch on the surface. Frayed yarn is the result!

There are other causes of frayed yarn —some of them difficult to eliminate. But frayed yarn caused by needles is an unnecessary waste. Avoid it by using needles that are *uniformly smooth*.

Torrington Needles are made by machines that insure extra smoothness. Only fine materials are used in their construction. They are subject to rigid inspection. Their uniformity is obtained by a scientific control over every detail in their manufacture. Use Torrington Needles and you will find this uniformity reflected in smoother knitting . . . longer service!

Good knitters the world over vouch for the quality of Torrington Needles. We invite you to put them to the test.

The Torrington Company

ESTABLISHED 1866

Torrington, Conn., U.S.A.

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THE TORRINGTON CO., INC.	200 FIFTH AVE.,	NEW YORK, N. Y.
THE TORRINGTON COMPANY,	538 SOUTH WELLS ST.,	CHICAGO, ILLINOIS
THE TORRINGTON COMPANY,	GUILFORD BLDG.,	GREENSBORO, N. C.
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COVENTRY, ENGLAND AACHEN, GERMANY

TORRINGTON NEEDLES

Latch

Routing Goods from Knitter to Dyehouse

A southern mill man gives here his system of keeping a record of knitted goods from knitting machines to dyer . . . . . .

EDITOR COTTON:

I want to do my part toward helping the "KNITTING KINKS" section of COTTON from which I have received a great deal of benefit, and in looking around for a subject that might be interesting to other readers, I have decided on the subject of routing goods from the knitter to the dyehouse and will endeavor to explain our system of handling this. A large percentage of seconds can be made by the improper handling of goods over this route and I will undertake to tell how we do it in a manner that is satisfactory to us, hoping the information may be of help to others.

Our goods are put up by the knitter in canvas bags which have a draw string at the top. We turn them in in ten-dozen lots, using a tag like the accompanying white ticket, which we will call No. 1. You will note that this ticket carries a section for each operator in the line of work; and it also has a section at the top for each operator's number. We have a central checking room where these goods are delivered by the knitter in ten-dozen lots. The lot is weighed in by the knitter's checker and placer in a rack.

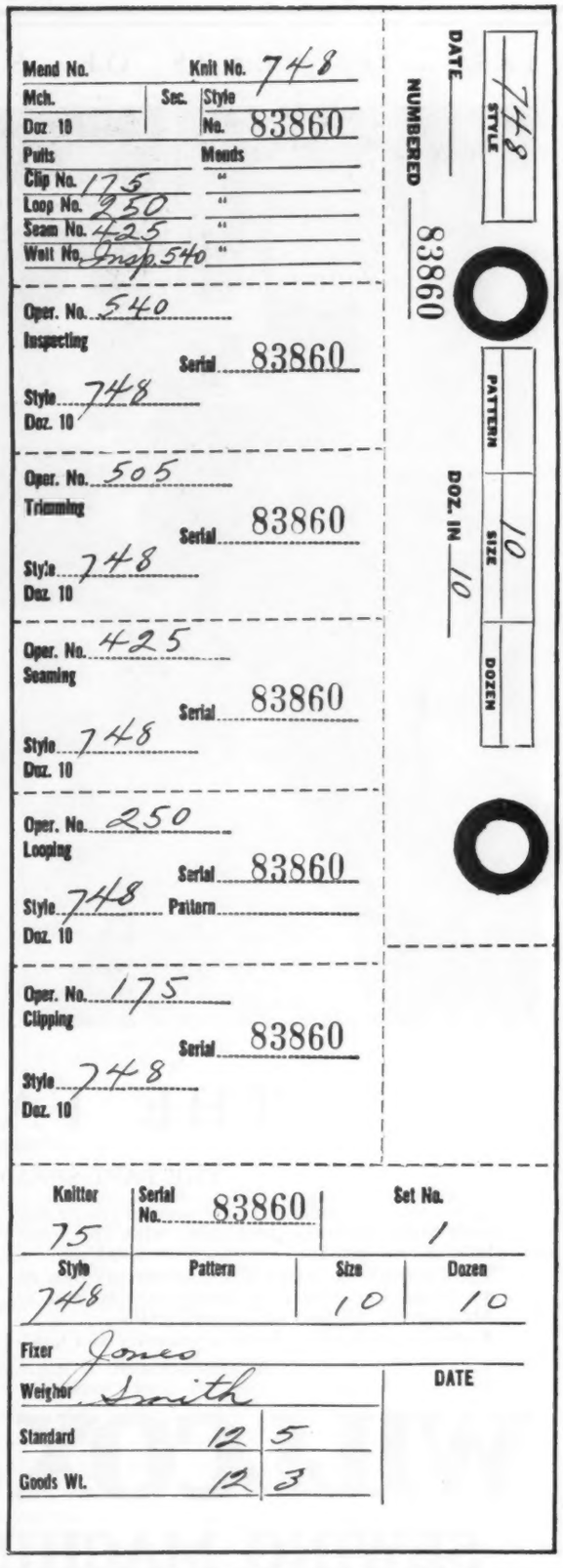
For the next operation, which is clipping the double sole, the clipper finishes the lot and returns it to the checking room ready for the looper; then it is issued out to the looper and returned for the other operations, and so on down the line until it is ready for the dye-house, each operator putting his or her number on the proper section on the ticket; and they also put their number on the top section of the ticket so that we can check back on any bad work done by any of the operators.

We have five colors of looper clippings to fasten on tickets to the bag using a separate color for each day in the week. For instance, we use red on Monday and yellow on Tuesday, and our check boys understand that all of the lots having tickets fastened on with red string are to be finished before they start goods with the yellow string. In this way we are able to have an even flow of production going through, and none of the lots get tied up. We permit each operator to take only one lot at a time, and she must finish this lot and return it before she gets another lot. We find that having only one lot at a time, we never get the ticket mixed on the lots. Before starting this system our operators were permitted to take two or three lots and we had quite a bit of trouble with mixed styles and sizes.

Whenever we have special rush lots which we want to have preference over all of the goods, we use a tag printed on pink paper which distinguishes it from the regular white tag.

Each operator is supposed to put his or her number on this section of the ticket and also on the top section of the ticket, and it is the duty of the checker to see that the operators' numbers appear in both places. These tickets are used by the time keeper in making up the payroll.

We have been using this central checking room



Ticket used for routing goods through the mill

system for about eight or nine months, and find that by careful handling of the goods we have been able to reduce what we call pulled threads about 75 per cent.

The checker who checks for the knitter weighs the

1859—76 YEARS OF SEWING PROGRESS—1935

Operator sewing elastic to hosiery tops with the Fastlock.

THE FASTLOCK

MAKES

THE FAST SEAM—THE FAST WAY

Now—you can make the new popular elastic-top knee-high stocking—profitably, with the Fastlock, a new machine for this new stocking.

The Fastlock successfully solves the problem of attaching the elastic—securely—neatly and at high speed, without the use of welts.

Fastlock production, both in quantity and quality, is far ahead of that secured from any other machine or method.

Operators not only learn to use the Fastlock quickly, but to operate it, efficiently and without fatigue.

Type No. 350 for attaching the elastic and Type No. 351 Flatlock for closing.

A demonstration is convincing. Let us prove the Fastlock on your stockings. No obligation, of course.

WILLCOX & GIBBS

SEWING MACHINE COMPANY

HOME OFFICES

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lot when received and files the knitter's check of the tickets away, and by the number of dozens appearing on these tickets the knitter is paid, likewise the clipper's checker tears off her section of the ticket and so on down the line. These tickets are numbered serially, which gives us an opportunity on any charges claimed by any operator, and we find that it works very satisfactorily.

We think this is a very important phase of the work in the knitting department and we shall be very glad to hear from any of your other contributors along this line.

CONTRIBUTOR NO. 6369.

Helpful Hints on Standard Knitting Machine Fixing

(Editor's Note—This is the ninth of a series of articles discussing the parts of Standard knitting machines and giving helpful, practical suggestions on fixing them. The first article appeared on page 129 of April 1934 and gave a history of these machines. The second article, on page 127 of May 1934, covered the parts shown on Plate I in the Standard catalog. The third article, covering Plates 2, 2A and 3, was on page 105 of the July issue. The fourth article, covering Plate 4 and 5, was on page 101 of the September issue. The fifth article, page 105, November issue, covered Plate 6. The sixth article, on page 107, January 1935 issue, covered Plates 8, 9, 10, 11 and 12. The seventh article, page 111, March 1935 issue, discussed Plates 13 and 14. The eighth article, page 134, May issue, covered Plates 15, 16, 17, 18 and 19.

The numbers in parentheses following the names of parts are the numbers used by the machine manufacturers for the various parts. It is suggested that the reader refer to the plates in question in the Standard catalog in reading these discussions, and that he clip these articles and file them in the catalog with the various plates for further reference.)

Standard Plate 20

EDITOR COTTON:

The Sinker Cam Gauge

Sinker cam gauges have caused many hot arguments among mill men. Some claim they could not keep sinker cams set properly without them, others maintain that sinker cam gauges are not worth a whoop. Many old time men have a collection of sinker cam gauges for every type of circular machine they "fix"; some of the gauges were made by the machine builders, others by individuals. Most of these gauges are resting in the bottom of the tool box under an assortment of pliers, wrenches, screw drivers, etc.

The machine builders would not have spent time and money designing the gauges if they did not have some value. On the other hand, there is something radically wrong with the fixer who cannot adjust sinker cams properly without a sinker cam gauge. The gauge, after all, will only tell the fixer that the sinker is *in* a certain distance but it is of no value in determining the *time* at which the sinkers must come in.

In a recent issue of COTTON (page 105, November 1934), detailed instructions were given about sinker cam adjustments, in an article covering the parts shown on Plate 6 of the Standard machine parts catalog. As stated in that article, there are *two* factors which must be considered in making sinker cam adjustments, namely, the *distance in* which the sinker must move and the *time* at which the inward movement must take place. In fixers' parlance, the former adjustment is known as setting sinker cams and the latter as setting bumper screws. Both adjustments must be made according to the time when the knitted loops are fully formed and each adjustment is directly related to the other. So, when we get down to facts, we find that the sinker cam gauge will only tell half of the story and the other half is left up to the good judgment of the fixer. And remember, too, that a sinker cam gauge will not make allowances for worn sinker caps nor will it show any respect for heavy or light, hard or soft yarn, bent needles, end cams out of adjustment and the like. In plain language, a sinker cam gauge hasn't a lick of sense. The fixer will have to furnish that. About the only thing to be said in favor of a sinker cam gauge is that it will furnish a starting point; if the fixer is in doubt he can get cams set fairly close, but with the knitting we have to do nowadays, close doesn't count; sinker cams must be set right or else we have trouble.

The remaining parts shown on Plate 20 are common every-day accessories and comments on them would be superflous.

Plate 21

Tipper Attachment

All of the circular machine builders can supply an attachment of this kind for their machines. The purpose of the tipper attachment is to produce goods wherein the central portion of the heel and toe are knit with yarn of a different color than the remainder. The device is generally used on small diameter machines, such as 2-inch, 2¼-inch and 2½-inch, on which it is customary to make sizes 3½ to 6½ inclusive. Various types of ingrain numbers are made, including wool combinations with colored mercerized tipping.

Numerous mechanical troubles will develop with most tipper attachments with yarn changing trouble ranking first on the list. Cutting in yarn changes, skipping, complete press-offs, and dropped stitches can also be included in yarn changing troubles.

In addition to the foregoing, we must include a few jam-ups caused by mechanical failures of various kinds in order that we might have a true picture of what the average tipper attachment will do for a machine fixer. Fortunate is the machine fixer who happens to be making tipped goods on Standard machines; their reputation for making quick and positive yarn changes is unequaled, consequently many of the troubles mentioned will be eliminated entirely.

The regular yarn changing mechanism is used, and an additional take-up sweep (K-6034) is supplied and a few simple parts which are necessary to control both take-up sweeps complete the attachment.

The attachment operates as follows: The machine changes onto the heel or toe in the regular manner;

when the point is reached where the tip yarn goes into action a pattern disc move is made, the forward end of lever (K-502) rides up on the disc cam (K-1581), the take-up control rod (K-1132) is raised; this throws the right take-up out of action and releases the left take-up through which the tip yarn is threaded. When the knitting of the tipped portion is completed the pattern disc moves again, putting the regular heel or toe yarn into action and taking the tip yarn out of action. The disc movements are alike in both heel and toe, the amount of tipping can be regulated as desired. Older models of machines were not equipped with pattern discs suitable for making tipped goods unless so ordered; newer models, however, are equipped with universal discs which are suitable for making both tipped and plain goods.

Other Uses for Tipper Attachments

Tipper attachments can also be used on machines making plain ladies' hose or men's hose, to make additional reinforced portions in the heel and toe. This can be done by using an additional yarn such as 100s/2 which begins to knit with the regular heel yarn and continues to knit until half of the heel is completed. The additional yarn is removed when the lowering pick goes into action and the heel is completed in the regular manner. The process is reversed in the toe, the additional yarn is engaged when the lowering pick goes into action and continues to knit until the toe is completed. Hose made in this manner will wear longer as the additional ply yarn is knit in where the back of the heel comes in contact with the shoe, and where the toes (especially the big toe) come in contact and rub against the upper part of the hose. Men's hose with tipped heels and toes have also been made; however, the tipper attachment was developed principally for infants' and children's numbers. The demand for tipped goods, like other novelties, is seasonal, according to the whims of the hosiery buyers, not necessarily the buying public but rather the hosiery jobbers.

Plate 22

Sinker Drop Stitch Attachment

The sinker drop stitch attachment as shown on the upper half of Plate 22 was developed by the Standard Machine Company about 12 years ago. It was greatly in demand at that time and some detailed information as to how it operates may be of interest to those who are not familiar with it. Drop stitch goods were first made by the needle drop stitch method, usually referred to as needle out. This was done by running the butts of certain needles through a race below the stitch cam bracket, which prevented these needles from taking yarn, thus making a drop stitch line in the goods. This method was satisfactory in many respects; it did, however, have one draw back: it reduced the elasticity of the fabric according to the number of needles which were out of action.

The sinker drop stitch attachment eliminated this difficulty, for with this attachment, all needles remain active, the drop stitch or vertical lines in the fabric being made with specially shaped sinkers placed according to the number of lines desired and controlled by the parts shown on the plate. I will attempt to describe the parts, their action and adjustment to the best of my recollection.

The device is controlled by a series of cams placed on the under side of the pattern disc and show on the plate as follows: (K-1590, K-1585, K-1586, K-1587, and K-1584). It will be noted that cam (K-1590) is made in three steps, this cam is known as the start-off cam and is used to bring the drop stitch sinkers into action gradually when the leg knitting begins. The lever (K-107) is attached to the frame and is held inactive when off the cams by the spring (K-666). The upper end of lever (K-107) is supplied with an adjusting screw (C-1721) which comes in contact with the bracket (K-106) when the lever moves inward.

Five kinds of sinkers are used to make two different widths of drop stitch lines; three kinds of sinkers are used to make either kind of drop stitch line. The various kinds of sinkers are shown in the sketch here-

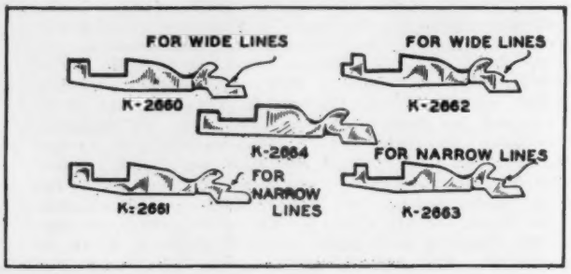

Fig. 1—DROP STITCH SINKERS. Note difference between lower nose of sinkers used for narrow and wide lines . . . . . .

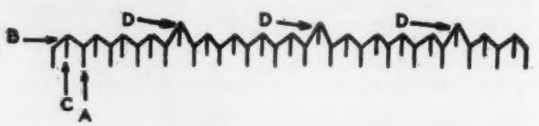

Fig. 2—Showing how lines are made with sinker drop stitch attachment. A, needles; B, yarn, C, 2664 sinkers, and D, drop stitch sinkers in raised position

with, sinkers (K-2660, K-2662 and K-2664) are used to make wide lines, and sinkers (K-2661, K-2663 and K-2664) are used to make narrow lines.

The wide and narrow lines are made by the slightly different shape in the lower nose of the respective special sinkers.

Making the drop stitch or line is very simple. It is accomplished by the sinker drop cam which is attached to the under side of bracket (K-106) pressing the butts of the special sinkers downward. This raises the inner end of the special sinkers at the knitting point, causing additional yarn to be drawn over them while they are in the raised position. Note the sketch showing the relation of plain sinkers, special sinkers, needles and yarn. In arranging the sinkers in the sinker dial, sinker (K-2664) is used in place of the regular sinker, it being the same as the regular except that it has a low butt which prevents it from coming in contact with the sinker drop cam. Sinkers (K-2660 or K-2661) are used between the long butt needles, and sinkers (K-2662 or K-2663) between the short butt needles.

It will be noted that the butt of one drop stitch sinker is full width, the other having a narrow butt.

This is necessary to eliminate the drop stitch lines in the high splice and sole. When the bracket (K-106) moves into action, the first move is made while the narrow butt sinkers are passing in front of the sinker drop cam. When the full butt sinkers are under the sinker drop cam, the bracket (K-106, moves fully in, and lines are made all around in the fabric. When the high splice and sole are made, the bracket (K-106) remains half way in, causing the sinker drop cam to act only on the full butt sinkers. Lines are made only in the instep, the high splice, and sole, are left.

Two other parts complete the attachment. These are the spring (K-665) which moves the bracket (K-106) out of action when it is released by lever (K-107) and the sinker hold-down plate which is attached to the sinker dial cap. The hold-down plate is placed above the sinkers directly in front of the sinker cam. Its purpose is to prevent the drop stitch sinkers from raising upward while being moved outward by the sinker cam. Holes will be made in the heel and toe or ring toe by the drop stitch sinkers, if the hold-down plate is not set accurately.

In using this device, the sinker cam and dial cap adjustments are made in the same manner as for plain work. The sinker drop cam is provided with two adjusting screws (C-986) which permits raising or lowering the cam, thus increasing or decreasing the width of the drop stitch line.

The term sinker drop stitch as used in connection with the attachment is really a mis-nomer. A drop stitch is not actually made, but rather an elongated sinker stitch or bar reaching from one needle to another with a raised sinker in between as shown in the sketch. This device is simple and not at all troublesome. It may be a has-been at present, but like many other attachments, new uses may be found for it in the future; if it can be done, Standard's experimental department will do it.

Double Sole Evening Cam

The double sole evening cam device consists of a special top cam having an offset at the point as shown on the plate. Several medium butt needles are placed on each side of the cylinder in place of long butts. The top cam draws all long butt needles down and permits the medium and short butt needles to run at a higher level. This makes it possible to engage and disengage the double sole yarn on each side of the cylinder between the long and medium butt needles. Stitch cams with a slightly longer upper portion are also necessary to assure all short and medium butt needles going under the points of the stitch cams.

This device was replaced about two years ago with a new and greatly improved attachment. The new attachment is operated by needle jacks; the jack cam being placed directly under the top cam. The double sole can be kept in a perfectly straight line on both sides with the new attachment; it is also useful in other ways. A detailed description of the new double sole evening attachment, with sketches, will appear in the next article in this series.

All seamless hosiery machine builders have double sole slackening devices for their machines; each operates in a different manner, but the ultimate results are the same. It is difficult to knit good seamless hose with a fairly heavy double sole yarn, without using a slackening device. Bad plaiting, fuzzy knitting, loose insteps and short feet are a few of the troubles which develop when double sole slackening attachments are not used.

Double Sole Slackening Device

The device shown on the plate is of the vibrating type, and slackening of the double sole is accomplished by raising the needle cylinder when the sole yarn drops in, and lowering the cylinder when the sole yarn lifts out. The complete device consists of a few parts which are added to the regular tension device shown on Plate 8. The disc cams (K-720) and (K-707) throw the device into action, additional control being secured from the spring (K-706). Raising and lowering the cylinder is accomplished by two adjustable cams (K-716) and (K-715) which are attached to pinion (K-626). The lever (K-285) is attached to the disc support cap with pivot screw (H-623). The steel operating cam (K-705), being attached to lever (K-285), is actuated by cam (K-716) and (K-715) as they revolve.

When the device is in action the hook on the front end of cam (K-705) rides against the under side of cams (K-716) and (K-715), and above these cams when the device is out of action.

Adjustments are made with screw (K-863) which is placed in the inner end of lever (K-285) and acts on the yoke of the tension device.

This device was satisfactory from a mechanical standpoint; however, it did have one disadvantage. It was impossible to slacken the double sole beginning with the needle where the sole yarn would enter and stopping on the needle where the sole yarn came out.

A new and improved double sole slackening device is now made for the Standard machines. It is very simple and far superior to the old attachment. A special effort will be made to have full information about this new attachment in the next article of this series. This next article will also cover the parts shown on Plate 23.

MARTIN A. SHAW.

Seven Errors of Man

We are all prone to make mistakes. Although they may vary in the amount of damage caused, they are, nevertheless, mistakes. A well-known writer has compiled a list of seven mistakes which most of us make at one time or another, some repeatedly:

1—The delusion that individual advancement is made by crushing others down.

2—The tendency to worry about things that cannot be changed or corrected.

3—Insisting that a thing is impossible because we ourselves cannot accomplish it.

4—Refusing to set aside trivial preferences, in order that important things may be accomplished.

5—Neglecting development and refinement of mind and not acquiring the habit of reading and study.

6—Attempting to compel other persons to believe and live as we do.

7—The failure to establish the habit of saving money.—*Journal of Commerce.*

Two Alis-Chalmers Leaflets

Allis-Chalmers Manufacturing Co., Milwaukee, Wisconsin, are distributing two new leaflets—No. 2100 describes Wound Rotor Induction Motors", and No. 2183 describes "Type E Direct Current Motors and Generators".

THE KNIT GOODS MARKETS . .

"Unconditional Guarantees"

UNCONDITIONAL guaranteeing of women's silk full-fashioned hosiery by retail stores seems like a bid for business at the expense of an invitation for trouble later, when and if abuse of the practice becomes as common as are abuses of several innovations in merchandising which had their origin many years ago and have become so generally recognized as essential for maintaining customer goodwill that they hardly could be dispensed with.

Citing a quite recent Federal Trade Commission ruling in the case of a hosiery company in Texas, some department store interests have expressed the hope that it will be applied "unconditionally" to the retailing of hosiery. In the Texas case, it will be recalled, the hosiery concern was required to stipulate that it would not represent its product as guaranteed against wear or for a stated period and that hosiery in which a hole or run is found within a year will be replaced "when these are not the facts".

The last six words in the stipulation would appear to relieve retailers from inclusion in the ruling if their representations "are facts", and it seems not unlikely that hosiery intended to be distributed under a guarantee such as is given by the N. Snellenburg & Co. department store in Philadelphia will be subjected to very close inspection after severe tests at the mill. This company pioneered the guaranteeing of retailed hosiery in Philadelphia, its first sale of the insured stockings taking place last November. As selling by this plan never has been discontinued and still is being advertised, it is pointed out by E. A. Bleckwell, the buyer, it is to be assumed as satisfactory.

The stockings guaranteed carry the company's store brand, "Arbest", are priced one dollar a pair, and the guarantee is unconditional as to time limit. The line embraces ringless chiffon in three lengths and seven-thread high twist silk service weight. The form of guarantee received by purchasers, applying to each pair of stockings purchased, stipulates:

> In consideration of the purchase price paid for this pair of hose, the purchaser is hereby insured against loss as follows:
>
> This policy insures satisfactory wear for this pair of hose. Should this pair of hose not give the desired wear the purchaser may return the hose with this policy, duly signed, and receive a new pair without cost.

The Strawbridge & Clothier department store ran a pre-Easter promotion sale of branded stockings, at one dollar a pair, under a similar guarantee, except that the time limit was six months from date of purchase. As stated by Mr. Bleckwell, of the Snellenburg company, the store stands back, without reserve, of every pair of guaranteed stockings. It is understood that the manufacturer protects the Snellenburg store in its guarantee, from which it is obvious that the stockings before leaving the mill meet a test that warrants the manufacturer in guaranteeing to the store all that it guarantees to the customer, for which there is, necessarily, a charge that is taken care of in the price of the stockings.

If the practice of selling hosiery under a guarantee as to satisfactory wear becomes common, more of the better types of stockings doubtless will be bought by discriminating women and more nearly adequate prices will prevail. That they will be ringless and embrace no seconds seems a foregone conclusion. What per cent of returns under the guarantee were received by Snellenburg's and by Strawbridge & Clothier has not been revealed. That the comebacks were not in excessive quantity, so far as relates to the Snellenburg sale, is clearly indicated in continuance of the sale.

For some time the Snellenburg company has been selling men's silk socks at 29 cents a pair, guaranteeing "every pair to be perfect and agreeing to replace any pair that falls short of satisfying your demands." Not a pair of guaranteed half hose has been returned, it is stated by Mr. Bleckwell.

Philadelphia, Pa., May 16, 1935.

More Curtailment and Better Prices Predicted

PRICES for virtually all types and classes of hosiery for fall should show moderate increases, barring any serious disturbance of business by untoward happenings of legislation inimical to industrial and commercial progress. This view assumes that the rise will be due to natural processes; that there be no further attempt at artificial boosting of prices, and that the operation of the unwritten law of supply and demand be recognized as a governing element.

The trend toward higher values for basic raw materials for the textile trades obviously should carry prices of manufactured commodities to a more nearly stable level. There are reasons for believing the Department of Agriculture is determined to undertake the establishing of higher markets for direct products of the soil not already specifically taxed. In any event it appears at this writing that prevailing scant profits or no profits for manufacturers will result in curtailment of production sufficient to remove industry from the red.

Curtailment obviously would mean an increase in unit cost of goods, and if that cost be made great enough to shake consumer serenity, still further reduction in output might be effected for meeting a lessened demand. All of which has been brought so forcibly to the attention of numbers of mill managements in the past month or two that it would seem there will be studied avoidance of a repetition of the causes which brought about the proposed curtailment program early in May.

Although if there were no increases in operating cost, the curtailment movement would in itself doubtless eventuate in upward adjustment of prices. There are indications of silk throwsters increasing their charges for service, since prices of oils and fats used in their processing of silk have had several advances, due in some instances to higher prices for silver. These increases vary, according to the ingredients required, from 25 or 30 per cent to more than 50 per cent. There is thus prospect of a higher cost of hosiery tram even in the absence of higher prices for raw silk. Hosiery prices, it would seem, will advance at least enough to cover the increasing cost of the essentials in plant operation.

South Relieved of Blame for Price Cutting

As blame for inadequate prices for women's full-fashioned hosiery was laid by some important Pennsylvania mills to establishments in that state, it seemed not inappropriate that steps toward putting production on a profitable basis originated in that sector. Some interests sought to make it appear that downward revisions of prices when demand slumped in April originated among southern manufacturers. The latter were defended against this allegation by mill chiefs in Philadelphia and Reading, and credited with maintaining more nearly stable market prices than many of the mills in the North.

Manufacturers in Reading were, it is maintained, the first group to adopt the plan of operating plants only against orders. This bore fruit and it matured early, when several manufacturers in Philadelphia announced a curtailment program, probably the first being the Apex Hosiery Co., which on May 13 reduced its working schedule to three days a week. The next move was made by the Full-Fashioned Hosiery Manufacturers, Inc., whose office in Philadelphia issued a bulletin to members citing a deplorable condition in the full-fashioned hosiery market, urged curtailment by all who could afford to inaugurate such a program and said, in part: Prices on so-called low end numbers had declined still further in the two weeks following the Knitting Arts Exposition, "contrary to expectation of those who heard John H. Brine, retiring president of the national hosiery body, plead with manufacturers at their convention to improve the price situation."

It was pointed out in the full-fashioned association bulletin that several manufacturers of nationally known branded lines of hosiery had introduced new numbers at lower prices, offering four-thread silk, 42-gauge, ringless, for $6 and $5.92½ a dozen, and a seven-thread 42-gauge, with cot-

ton top and feet, at the same price, with the result that "manufacturers of unbranded lines who were endeavoring to uphold prices fell in line with proportionate reductions in their own lines."

It was made apparent in more ways than one that substitution of a number at a lower price than the number it displaced was no cure for price weakness. The primary markets received a jo't when the Berkshire Knitting Mills announced a 42-gauge plaited foot number at $5.75 a dozen, and substituted it for an all-silk number at $6.25 a dozen, it was reported in the trade. The fact that at least two nationally known manufacturers selling to the retail trade had set prices of $5.92½ and $6 respectively was given among hosiery trade leaders as accounting for the new number of the Berkshire Knitting Mills.

In less than 48 hours after first appearance of the Berkshire announcement, other mills were represented as contemplating similar action, which was by no means surprising, in the keen competition for orders. Anyway, it is conceded, the action of the Berkshire company, the proposal of mills in Reading to operate plants only against firm orders, and curtailment to three days a week by the Anex Hosiery Co., whose president formerly was president of the National Association of Hosiery Manufacturers, started something in the direction of a better balance of production and effective demand in the field of full-fashioned hosiery.

After a survey of the hosiery industry during the latter days of the post-war depression, back in the early '20s, the assertion was made at a meeting of manufacturers in Charlotte, N. C., that "never before had the industry been so near complete stoppage." There was a sensational decline in prices during that short-lived depression, values declining in a few months from world war time levels to approximately the levels that existed before war needs caused a scarcity of goods for civilian consumption. Most mills survived the market collapse of that time, and among the older manufacturers it is asserted conditions then were more menacing than at any time during the declines of the past few years.

If the curtailment program, recently started, be adhered to by many manufacturers, it is felt that the summer of 1935 will witness more activity in American hosiery mills than ordinarily prevails in that season.

A slackening in demand for several textile manufacturing products seems to contradict trade forecasters whose prophesies of plenty of business right ahead were predicated on the oft-repeated solacing assumption that "shelves were bare, stocks depleted and merchants were forced to replenish," etc. The seers overlooked the consumer, so far as relates to women's silk stockings, says a nationally known buyer for the trade in a retrospect of the conditions as presented this year to mid-May. His idea of the start and progress of the reactionary movement is this:

"There had been so many promotion sales, mark-downs, guaranteed wear and other allurements by leading department stores and so much exploiting of apparently low price hosiery, that women became fed up with this manner of promotion and bought hosiery when it suited them to do so—when they required a few more pairs—that they have become less inclined to do much buying seasonally. This, I believe, explains why probably all of the large stores were disappointed with their relatively light pre-Easter business. We all looked for a busy few weeks in the hosiery departments. As the consumer failed to respond according to our expectations, the buyers did not give mills the expected repeat orders for Easter hosiery, and even so, had plenty for the after-Easter trade. Now, it transpires, manufacturers kept on running their mills to capacity, although sales fell off, and stocks were accumulated. There you have my explanation for the slack demand and unreasonably low prices," said the buyer. "It is unfortunate that curtailment was not started some weeks earlier," he added.

Nothing contained in the monthly statistical bulletins of the Department of Agriculture and the National Association of Hosiery Manufacturers supplies evidence that low retail prices stimulated consumer buying. And it is the testimony of numbers of manufacturers that buying has not increased under continued underselling.

South Leads in Machine Installation; 45-Gauge Leading Full-Fashioned

Of the full-fashioned hosiery knitting machines installed in American mills in 1934, taking domestic and foreign as a total, 67.6 per cent were of 45 gauge, according to a report of a survey by the Textile Machine Works, and of the machines manufactured by that company, 72 per cent of the 1934 installation was of 45-gauge. The survey shows also that of last year's installations of Reading machines, 52 per cent were set up in the southern states, North Carolina being credited with 40 per cent of the total. Graphs used in the report of the survey reveal that slightly less than 10 per cent of the installation of Reading machines went to mills in Philadelphia. Pennsylvania is credited with having added 33 per cent of the Reading machines shipped, or seven per cent less than North Carolina.

Tracing the progress toward finer gauge hosiery, as indicated in installation of 45-gauge machines, a chart reveals that in 1925 less than five per cent of the production of Reading machines was of that gauge, compared with 72 per cent in 1934. Coincident with this increased output of 45-gauge, 42-gauge dropped from around 77 per cent of the production of Readings in 1925 to approximately 21 per cent in 1934. Output of 48-gauge equipment declined from around 12 per cent of the whole in 1928 to around three per cent in 1934.

The survey accounts for 315 full-fashioned hosiery mills in the United states, a loss of seven since 1933. Losses in number of mills occurred in the southern belt and in the territory comprising the New England, New York and New Jersey mill centers. The mills are distributed among 26 states.

Using figures from the statistical bureau of the Hosiery Code Authority, the Textile Machine Works incorporates in its survey report a graphic chart for showing production and shipments of full-fashioned stockings by months during 1934. The low point in shipments is shown for June-July—1,500,000 dozen pairs—compared with slightly less than 2,000,000 in January, and slightly more than 3,300,000 dozens in October, declining to almost 3,100,000 dozens in December. Production is shown as greater, with but one interruption, from January to July, and less than shipments from August to the end of the year

Production of women's full-fashioned rose to almost 34 per cent of the total for women's, while women's seamless output was at its lowest comparative stage in August, rising to a trifle more than 10 per cent of the aggregate for women's in December. Peak per cent production of seamless for women is shown as occurring in April, approximately 12.5 per cent of the aggregate.

Using biennial census figures, the report of the interesting survey shows the value of the total production of all classes of hosiery in American mills was in 1929—$500,000,000, the value of the full-fashioned output in that year going over the top at about $300,000,000. It was around 1¾ million dollars in 1933.

Of the total exports of hosiery last year—1,044,000 dozen pairs—223,000 dozens were of women's full-fashioned.

Competition in "Ringless" Same as in Staples

The exploiting of three-carrier ringless types of hosiery at prices not far above what manufacturers were supposed to be receiving, not only did not help matters, but was disturbing to the retail trade. A chain shoe store establishment sold true ringless for 49 cents during the depth of the lull in May, while conventional full-fashioned were priced 47 cents. By the middle of May a promotion sale in a women's ready to wear specialty shop featured ringless at 59 cents. About the same time another store was pushing ringless hose over the counter on a 57-cent price.

It appears ringless hosiery, which were expected to give manufacturers a long looked for opportunity to produce at least one popular type at a profit encountered several snags about the time the clear, shadowless should have virtually monopolized the silk full-fashioned market for women's stockings. But for rival groups of manufacturers in the ringless field pulling in opposite directions with different objectives, it should have been a simple matter, it appears, to maintain profitable prices by exercising control of or, in any event, limiting, production.

The outcome of pending litigation will clarify the situation and possibly enable the promoters of the Kaufman three-carrier patent to atttain the original objective. Meanwhile competition is as vicious in ringless as in conventional types, but it was believed as the May month advanced toward summer that conditions were on the mend. It had been observed by mill representatives calling at the larger retail stores that buyers for the stores showed less of a depressed feeling than was manifest among manufacturers. There had been improvement in sales of some of the other items, it was disclosed in replies to questionnaires.

No doubt the bulk of the business in full-fashioned hosiery will continue to fall to those manufacturers operating

The STANDARD·COOSA·THATCHER Line

Durene • Selo •

PREEMO DURENE • COMBED SAKS •

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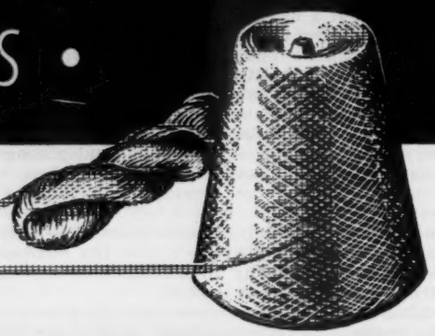
CARDED PEELERS •



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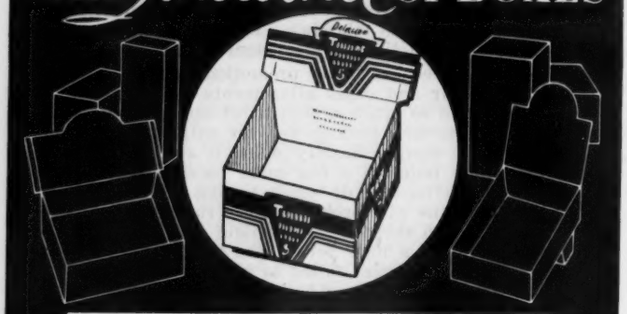

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for price. In a Pennsylvania mill which produces women's silk hosiery in gauges 45-, 42- and 39-, it is stated by the management that the 42-gauge produces a better per cent of profit than the 45, but that 39-gauge was more nearly a bread winner. This is a popular number among hosiery specialty shops stressing price, and there is sustained interest in the acquisition of used 39-gauge equipment. In Philadelphia, retail sales of dollar conventional type full-fashioned hosiery have been promoted by guaranteeing the stockings unconditionally as to service. Such sales are regarded as having proved that there is a wide open outlet for stockings at a dollar a pair, and even at higher prices, under merchandising policies that make an appeal.

The M. B. Bergey Co., Souderton, Pa., women's silk full fashioned stockings, and operating steadily at capacity for almost two years, is bringing out a new dollar number, described as a "high grade semi-service". It is of seven thread silk and carefully styled. This company, by the way, is adding equipment for increasing production 25 per cent, it is stated by an executive. Another small town mill, the Chalfont, at Chalfont, Pa., also is expanding with the erection of an addition for housing more machines, in the meantime buying hosiery in the gray. A third mill in the Philadelphia rural area, the Danite, in Cheltenham, is taking the gray output of several mills after having recently installed ten machines. I. M. Silmore, a former jobber of hosiery in Philadelphia, recently took over 18 leggers and six footers in the plant of the Wallace Wilson Hosiery Co., in the Frankford section of Philadelphia, and is operating the plant as the Superior Hosiery Mills, selling the production in the gray, 30 per cent of which is taken by the former owner of the equipment, who operates a seamless mill. The full-fashioned machines had been idle for some time. The four mills, it will be noted, are expanding their production at a time when the body of the full-fashioned industry is urging curtailment. A leading Philadelphia jobbing house states that, despite the painfully low prices of some manufacturers supplying the retail trade, its hosiery business has been in very satisfactory volume this spring, showing no declines, especially in women's full-fashioned.

Conference Held on Colors and Shades

Weakness in the hosiery price structure is not the only ailment for which manufacturers are seeking a remedy. A long-standing complaint relates to colors and shades. It is receiving treatment at the hands of manufacturers and stylists who had their first consultation May 10 in New York, under a call of the National Association of Hosiery Manufacturers.

It appears that some large distributors of hosiery, notably chain stores, and some of the more important manufacturers, had been pestering the Textile Color Card Association for advance copies of the spring and fall issues, which are due to be sent to members of the association June 1 and December 1.

Heads of hosiery departments in large retailing establishments have been complaining for some time that manufacturers have a habit of ignoring the names and shades selected by the color card association and set up their own color schemes. Marshall V. Moss, president of the Nomend Hosiery Co., selling its branded lines to retailers, who attended the May 10 conference, leans to the idea of manufacturers adopting their own descriptive names for the colors they use.

Hugo Hemmerich, general manager of the Berkshire Knitting Mills and president of the Full-Fashioned Hosiery Manufacturers, Inc., made the point during an animated discussion that the larger mills whose product is sold under no brand find it desirable to prepare their lines well in advance of manufacturers of branded lines. He suggested that six basic colors be designated in advance of issuance of the seasonal color cards, for meeting the needs of the larger mills and the chain and catalog establishments. This suggestion is scheduled for consideration at a later conference. The initial conference on the subject, on May 10, was presided over by William H. Gosch, president of the national body of hosiery manufacturers.

A color card association official was quoted some time ago as saying "the colors put out by various mills merely represent the individual opinions of the mills in question, while standard colors represent the opinion of an organization that has access to the best color information."

Statistics intended to reveal the output of knee-high stockings for women offer nothing convincing in the way of answering the question whether the recent innovation is proving the success that hosiery buyers for the trade predicted for it. The figures are contained in a statistical bulletin of the National Association of Hosiery Manufacturers for March 1935 and account for a total production of only 223,000 dozen pairs of the knee-highs. Four per cent were of the month's full-fashioned construction, amounting to 129,000 dozens. Nine per cent, representing the remainder, were of seamless build for women and misses.

"Knee-Highs Good Only as Innovations"

While when first the knee-highs were made available to the consuming public, they seemed to make an instantaneous nation-wide hit, the statistics for March as presented in the hosiery association bulletin would seem to contradict that impression. Obviously, knee-highs may not have made the expected appeal during March, and if consumer buying during that month was in light relative volume, necessarily orders were pared accordingly, judging from the trends in the hosiery markets as reported in various bulletins and other trade publications.

While it was felt in manufacturing and retailing circles that the knee-highs would prove a business getter so long as they remained in the innovation class, there were manufacturers who expressed doubt as to the expediency of any departure from staples that might have the effect of encouraging a return of the bare leg "fashion" which was launched several years ago. It was the theory of these doubting mill men that any shortening of women's and misses' stockings would prove a step in the direction of no stockings other than mere anklets—for comfort. It seems unsafe, however, to draw conclusions from statistics even though 100 per cent accurate.

Although in March 1935 production of hosiery, all classes, was approximately only 214,000 dozen pairs less than in the corresponding month of 1934, according to reports of 334 identical establishments (representing 395 mills) to the Department of Commerce, orders booked amounted to around 800,000 dozens less, and net shipments 135,000 dozens less. Stocks on hand increased during the month by approximately 1¼ million dozens. Increased holdings at mills can be accounted for in the reports of the 334 identical establishments by the showing that their unfilled orders on April 1 were around 2½ million dozens less than on the similar date of 1934.

As making statistics appear the more confusing in an analysis of the reports of manufacturers as a body, net shipments of women's full-fashioned were 65,631 dozens more in the 1935 March than in the corresponding month of 1934, this notwithstanding the chief complaints of unsatisfactory business emanating from full fashioned circles. Furthermore, on a per centum basis, unfilled orders and increase in mill stocks were lighter as to full-fashioned than in hosiery as a whole.

Outstanding declines in production from March a year ago were in women's seamless rayon and cotton combination, from 11,552 dozens to 4,111 dozens; boys', misses' and children's of like combination, from 154,066 dozens to 81,815, and infants', from 81,085 dozens to 49,820 dozens. It seems interesting to note that while women's seamless rayon-cotton combination dropped by more than 60 per cent, women's full-fashioed of the same combination increased by around 1,000 dozens, or approximately 15 per cent. Production of women's rayon had only a modest decline in seamless, while in full-fashioned rayon output declined to 5,358 dozens, from 35,572 dozens in March last year. Rayon scored no increase except in men's half-hose, and in rayon-cotton combination numbers as a whole, production dropped approximately 13 per cent. Economic expediency was not reflected in any increase in use of cotton stockings of any type, men's, women's or children's, the decline, for all classes, amounting to 109,927 dozens, according to the Department of Commerce compilation of identical manufacturers' reports.

The statistical bulletin of the Code Authority of the National Association of Hosiery Manufacturers for March accounts for a total production of 9,692,000 dozens, an increase of five per cent over February. Shipments in March increased 12 per cent over February. Shipments exceeded production for the month, the bulletin states, adding that this excess appeared entirely in the seamless division. Shipments for the first three months of 1935 exceeded by 1½ million dozen pairs those for the corresponding period of 1934. And yet, manufacturers in that period produced around two million dozens less this year than in 1934. The trade, it seems apparent, had overestimated the volume of hosiery retailing for the pre-Easter shopping, and now is being urged to offset the effect of that miscalculation by approximately a two-fifths curtailment, so far, in any event, as relates to women's full fashioned.

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COTTON

ATLANTA, GEORGIA

The underwear primary markets present the usual between-season inactivity. Since placing their initial orders, distributors appear to be little interested in men's heavy weights. There is some little filling in, enough to keep buyer and seller familiar with prices.

Manufacturers have weathered the assaults on prices a few weeks ago, when an element among buyers for the trade was willing to anticipate at a price concession. It was realized among sellers that any break in prices in an individual case would likely mark the commencement of recessions down the line, or, in any event, another period of unsteadiness. It was an occasion when manufacturers were less inclined to go after business on the Go-as-you-please order, as often when the market lost its seasonal vigor.

It is figured among leading operators and not disputed by jobbers that the bulk of the goods for fall and winter remains to be contracted for. There is seen a fair amount of business in the foreground, but no indications of early development.

The heavy weight underwear markets are expected to brisk up as commitments for jobbers' fall distribution become imperative, for, it is pointed out, there will be less hesitancy than in some seasons, to take in goods on the rising prices for cotton and woolen yarns.

Distributor apathy toward fall weights last month was attributed by some manufacturers to an intention to wait until it shall have been definitely decided as to what will be the fate of NRA, and whether the cotton processing tax will be lifted or reduced. With these questions disposed of, doubtless before the end of June as to the tax, retailers and jobbers will, it is felt, be more ready to operate.

If merchants had their way about the shortened shorts for men's summer wear their withdrawal from the markets would be a matter of a very short time. Prices are being reduced as modifications of the original are shown in cheapened form, so that the profit for distributors cannot be of any very great moment on the per centum way of reckoning returns.

Men's panties, a name given to the shortened shorts, came out last month in the tuck stitch fabric, which has been popular for women's snuggies. Which led a jobbing house buyer to remark that men's lingerie now includes "snuggies".

Not in years has an underwear innovation met with so broad a reception as the panties for men. Manufacturers receive repeat orders for them, but demand has not increased to an extent that was predicted following the favor with which they were received when first introduced. Some interests profess to believe that another season will witness the retirement of the quite recent very popular shortest shorts. Their companion piece, an abbreviated undershirt, appears to be in stronger favor than the shorts.

A fair amount of business in women's medium weight cotton underwear is being written, at firmer prices than prevailed some weeks ago when salesmen were making their first tour of the trade with samples and prices for fall. Unless a break in cotton occur, it is thought this year will show an increase in shipments of women's cotton underwear, since it has been made to appear by statistics that rayon is yielding to cotton as finer yarns are used in the manufacture of women's under-garments.

Outerwear Has Late Start

Manufacturers of knitted outerwear are making a late start (not of their own planning) with production of sweaters for fall and winter. Initial orders have been received in a small way, and possessing no significance as to jobber attitude toward prices and anticipating their fall needs. Sweaters with shirred and pleated backs are innovations in this year's models that represent a radical departure from the standard construction of recent years. The trade felt that styling was necessary to build up a good fall sweater business. The garments are being shown also in brushed effect and in a variety of fabric, some of it from innovation yarns in combinations worked out by a few of the larger mills.

As spring sweater business did not measure up to reasonable expectations, it is felt wardrobes are bare of knitted outer garments suitable in emergency for early fall, and that therefore, with orders reaching them later than usual, they are likely to be in a jam when once the jobbers are moved to protect themselves against a scarcity.

The Pacific Knitting Mills, Los Angeles, Calif., may establish a branch sweater and bathing suit plant in the East, according to Vice President S. B. Hyman, who last month was planting his fall lines in the larger northern retailing centers along the Atlantic Seaboard.

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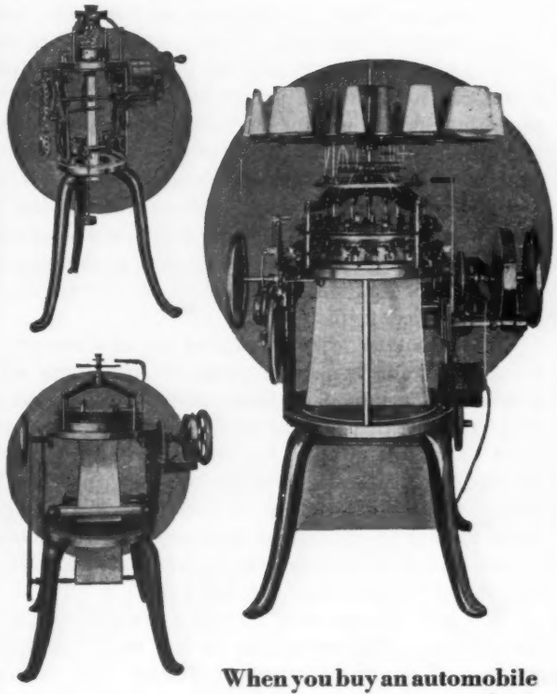

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REVIEW OF THE YARN MARKET

Philadelphia, Pa., May 16, 1935.

THE first definite upward swing in prices in months was the outstanding development in cotton and worsted yarns around the middle of May. In the case of cotton yarns, the rise had to be attributed to relative steadiness in cotton and more concert of action by spinners in the matter of experimenting with production at a profit over actual operating and selling cost.

Manufacturers are taking in yarns against contracts entered at lower prices than those asked generally through May. Shipments, in the main, were satisfactory, in that they made a considerable hole in stocks and strengthened the position of spinners in efforts to maintain prices on a parity with the premium that is exacted on staple cotton. But new business was in as light volume as some of the older traders could recall having experienced. All the while that manufacturers of cottons were giving the yarn market the go-by, prices were slowly advancing, until during the third week in May the prevailing quotations on single carded on cones were on the basis of 27 cents for 10s.

As increasing prices appeared not to stimulate interest in the movement of yarns to consuming mills, a few spinners marked their prices a half cent up, as if on the theory that so long as manufacturers were doing virtually no buying price had no bearing on sales and might as well be moved up a bit. The better volume of trading in carded yarns was confined mainly to underwear numbers. It was doubted in the Philadelphia trade, however, that the sales for May would equal those for April.

It would appear that spinners are not so encumbered with yarn holdings as earlier in the year. Statistics of production and shipments for virtually three months show that in seven weeks of that period production of carded yarns was less than shipments, shipments being comparatively heavy in April. In each of nine weeks in the same period shipments of ply combed peeler yarn exceeded sales, from which it might be inferred that manufacturers may be fairly well covered. During all of this time reductions in stocks of single combed peeler were being reduced, and at times the market could properly be described as active. Yet as a general proposal, prices in May were little higher than in April.

Single combed peeler yarns in May were fetching prices on the basis of 39½ to 40½ for 30s. Some business was lost to commission houses standing pat on 40. Sellers had inquiries as to lots of 50,000 pounds, in instances, but it was not recorded for publicity that any such lots had been sold.

Perhaps the highest price obtained for carded knitting yarn up to this time in May was 36½ cents for 30s, double carded, good average quality. Supercarded is quoted as a matter of comparison, but it is stated by leading merchants that the great bulk of the business that is passing is in average good quality on the basis of 27 cents for 10s single on cones. In the weaving division ruling quotations on warps have been on the basis of 31 cents for 20s/2 and 35 for 30s/2.

According to an authorized compilation of yarn trade statistics, made known recently for purposes of comparison, stocks of gray carded on January 5, 1935, were reported as amounting to 29,338,000 pounds and 24,029,000 pounds on April 27, showing a reduction in stocks in a little more than 15 weeks amounted to more than 5,000,000 pounds. For the same period, the compilation shows, total stocks of combed peeler yarns were reduced to 6,230,000 pounds from 8,387,000 pounds.

Production of single and ply combed peeler yarns for the first four months is given in the authorized tabulation as 31,455,000 pounds, or on the basis of 94,365,000 pounds for the present year, comparing with a production of 72,000,000 pounds in 1934 and 54,000,000 in 1933.

Outlets for mercerized yarns have, necessarily, been narrowed materially by the curtailment program in the full-fashioned hosiery industry. Some interests felt that with the substitution of cotton for silk for the soles of women's stockings, an increase in demand for mercerized yarn would follow. The looked for increase is said to have not been experienced, for one reason, doubtless, curtailment has reduced consumption of yarn more than the increase by proposed substitution for silk.

Sales have dwindled, while shipments against orders placed when the hosiery mills were using more cotton yarn have been well maintained, it is stated by mercerizers. Prices have undergone little if any change. One leading producer of mercerized yarns reports sale at prices in a range 68 to 70 cents for 60s/2 mercerized. Another concern states it is accepting no business at less than 70. Some few sales were said to have been negotiated on a basis of 67 for 20s/2. Obviously, the market for mercerized yarns was supported by the narrow fluctuations in cotton and the tendency to a hardening.

From the standpoint of price, it was observed in the cotton yarn trade, silk and rayon might be regarded the more attractive fibers, since prices have been advancing steadily on cotton yarns and marked radically higher on worsted yarns. Increases in prices of the latter became effective, as to numbers of Philadelphia and New England spinners, on or about May 15. Some announced their mark-up a week earlier, with the idea of arousing the trade to action, for keeping in step with higher prices asked for raw wool. Spinners stated there had been no activity since the increases became effective, and some doubted that, unless demand becomes more pronounced than at the time, they might not be able to maintain their new price lists. Worsted yarns are five to ten cents higher than in April, depending on fineness.

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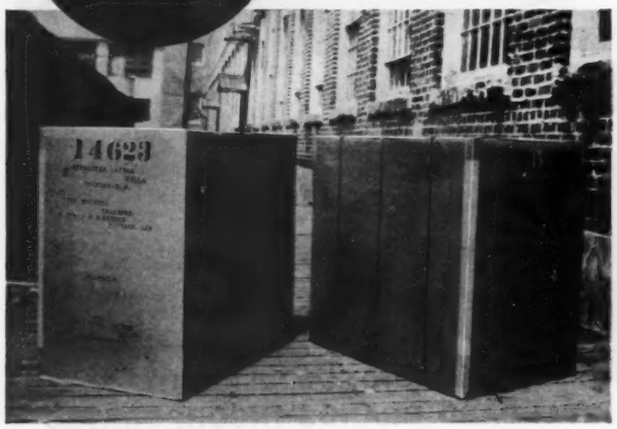

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The Finnell *scrubs* at less than the cost of mopping . . . keeps floors free from grease, oil, and grime and safe for workers. Prevents soilage. Demonstration free on request. Address FINNELL SYSTEM, Inc., 1306 East Street, Elkhart, Indiana.

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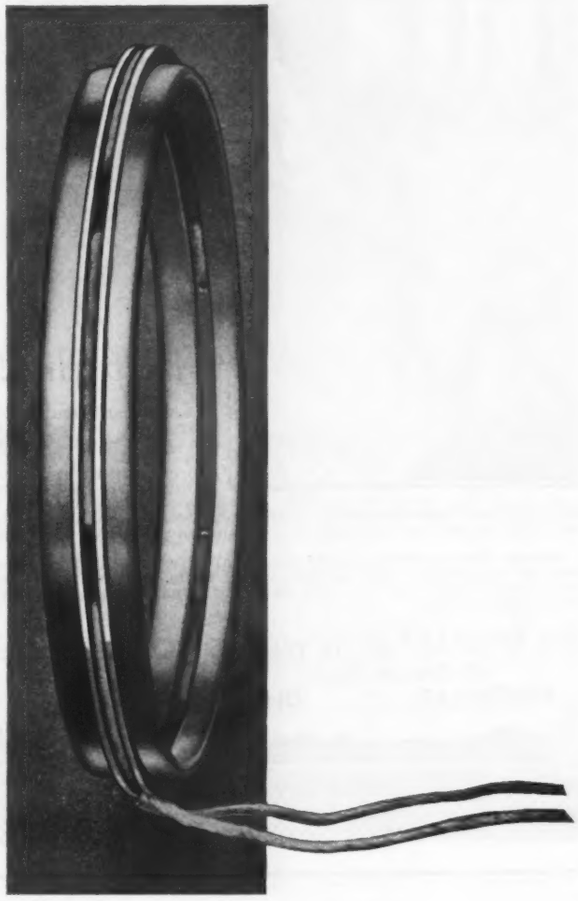

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An Inefficient Head Means WASTE

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Automatic **ATOMIZERS**

which will never clog—they automatically clean every time the system shuts off, maintaining FULL capacity without attention. All parts are non-corrosive. It is simple, non-adjustable, dependable. Can be connected to any system using 30 lb. air pressure, gravity water supply.

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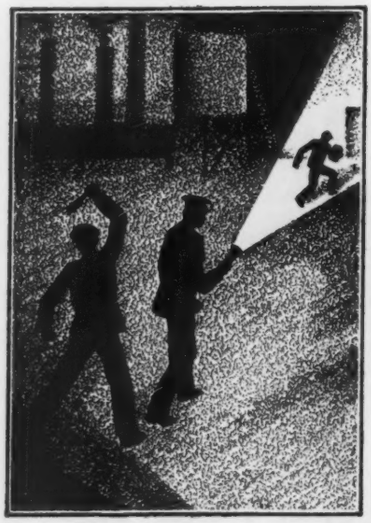

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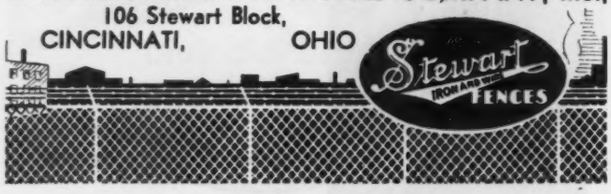

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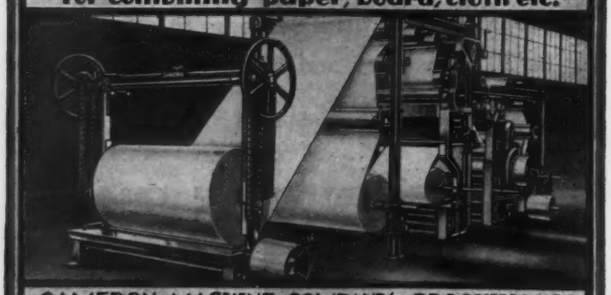
for combining paper, board, cloth etc.



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"Cotton Mill Machinery Calculations"

EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable.

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as accurate as the LIFE SAVER *hole*

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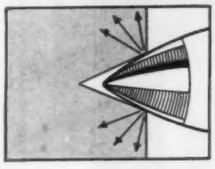
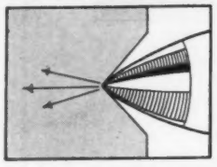
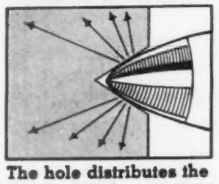
What happens when the hole is too small.



What happens when the hole is too shallow.



What happens when it is shaped by machine.



The hole distributes the shock over the greatest area.

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THE PICKER WITH THE LIFE · SAVER HOLE

THE GRATON & KNIGHT CO.
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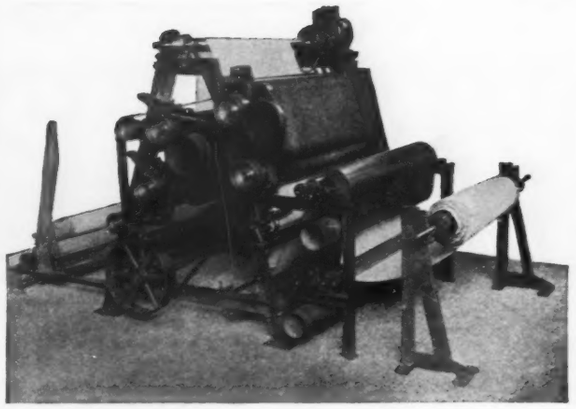

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"The South's Supreme Hotel"

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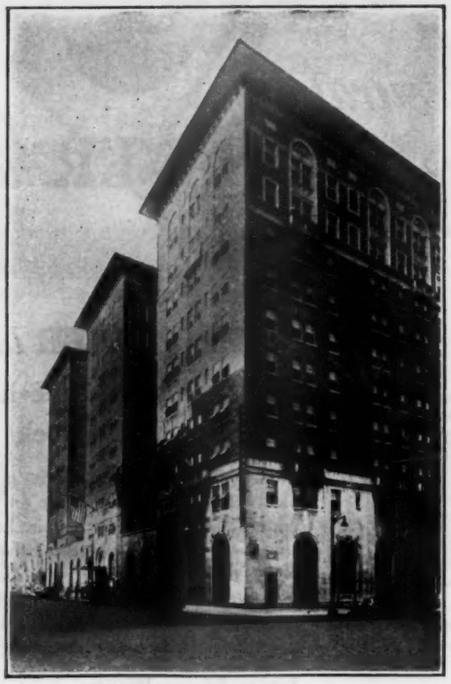

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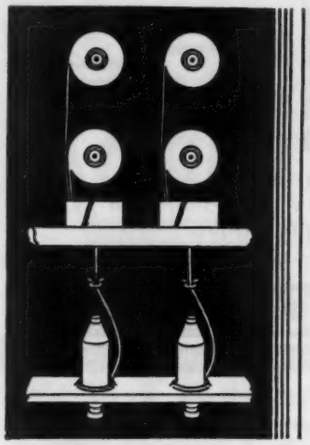

DON'T LOSE *money* Twisting *from* Spools *Use the*

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write and see why

to ABBOTT MACHINE CO.
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Specializing in Textile Machinery for relocation

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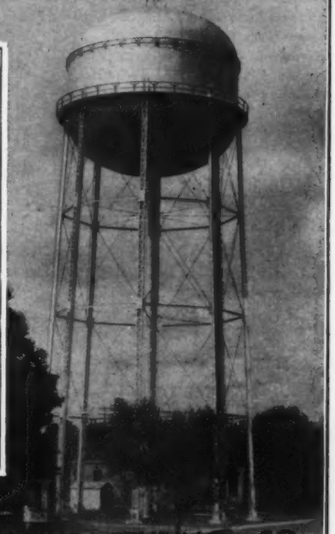

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These pulleys are bored, keyseated or set-screwed and ***turned on outside of rim*** only.

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Columbus, Georgia

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